

INDEX OF SUBJECTS.

ABSTRACTS. 1900. Parts I & II.

(Marked A. i and A. ii respectively); and also to Transactions, 1900 (marked T.); and to Proceedings of the Session 1899—1900; Nos. 213 to 226, Nov., 1899—June, 1900 (marked P.).

A.

Abienic, α - and β -Abietinolic and Abietolic acids and Abietoresen (TSCHIRCH and WEIGEL), A., i, 679.

Abies canadensis, balsam of (TSCHIRCH and BRÜNING), A., i, 678.

Abies pectinata, balsam of (TSCHIRCH and WEIGEL), A., i, 679.

Absorption in the small intestine (COHN-HEIM), A., ii, 289.

of carbohydrates, fats, and proteids (MOSSO), A., ii, 605.

of fat (HOFBAUER), A., ii, 605; (PELÜGER), A., ii, 667; (FRIEDENTHAL), A., ii, 668.

of fat in the large intestine (HAMBURGER), A., ii, 418.

of iodides by the skin (GALLARD), A., ii, 419.

of iron by the intestine (ABDERHALDEN), A., ii, 223, 289, 416.

of free oxygen by normal urine (BERTHELOT), A., ii, 740.

of saline solutions by the small intestine (WALLACE and CUSHNY), A., ii, 31.

of sugars in the intestine (HÉDON), A., ii, 223.

Acacetin from *Robinia Pseudacacia* and its acetyl derivative (PERKIN), T., 430; P., 1900, 45.

Accumulators. See Electrochemistry.

Acet. See also Aceto-, Acetyl-, and under the Parent Substance.

Acetal-*m*- and -*p*-cresol and -resorcinol (FOSSE and ETTLINGER), A., i, 392.

Acetaldehyde, heat of combustion and of formation of (BERTHELOT and DELÉPINE), A., ii, 334.

Acetaldehyde, condensation of, with propaldehyde (SCHMALZHOFFER), A., i, 626.

colour reaction of (RIMINI), A., ii, 56, 454; (LEWIN), A., ii, 179.

detection of, in ether (BLASER), A., ii, 179.

detection of, in fermentation vinegar (BÖTTINGER), A., ii, 773.

Acetaldehyde, dibromo-, hydrate of (WITTORFF), A., i, 421.

Acetaldoxime, spectrum of (HARTLEY and DOBBIE), T., 321; P., 1900, 14.

Acetamide, action of chlorodinitrobenzene on (KYM), A., i, 158.

thiocyano- (FRERICHS and BECKURTS), A., i, 478.

Acetanilide, action of dry silver oxide and ethyl iodide on (LANDER), T., 737; P., 1900, 6, 90.

Acetanilide, 3:5-dibromo-, 4:2- and 2:4-chlorobromo-, 2:4-bromonitro-, and 2:6:4-dibromonitro- (CHATTAWAY and ORTON), A., i, 643.

o-mono- and 2:4-di-bromo- and -chloro-, formation of (CHATTAWAY and ORTON), T., 798; P., 1900, 112.

m-chloro-, action of bleaching powder on a hot acetic acid solution of (CHATTAWAY, ORTON, and HURLEY), T., 804.

substituted nitrogen chlorides from, and their transformation (CHATTAWAY, ORTON and HURLEY), T., 800; P., 1900, 125.

di-, *tri*-, and *tetra*-chloro-derivatives of, from substituted nitrogen chlorides (CHATTAWAY, ORTON and HURLEY), T., 800; P., 1900, 125.

- Acetanilide**, 3-chloro-4-bromo-, 3:4:6-chlorobromonitro-, 3:6-di-bromo-, 3:4:6-tri-bromo-, and 4-bromo-3-iodo- (WHEELER and VALENTINE), A., i, 25.
p-nitro-, electrolytic reduction of (SONNEBORN), A., i, 464.
- Acetanilide sodium hydroxide**, thio- (WHEELER), A., i, 493.
- Acetanilide**, *d*-nitro- (MELDOLA and WECHSLER), T., 1172; P., 1900, 167.
- Acetic acid**, formation of, during the lactic acid fermentation of milk (BARTHEL), A., ii, 742.
 specific heat and heat of vaporisation of (LUGININ), A., ii, 334.
 freezing point of aqueous solutions of (DAHMS; DE COPPET), A., ii, 65.
 compounds of, with manganese (MEYER and BEST), A., ii, 77.
 detection of, in urine (ARNOLD), A., ii, 113.
 estimation of, in vinegar (DURIEU), A., ii, 322.
 estimation of propionic and butyric acids in (MUSPRATT), A., ii, 375.
- Acetic acid**, silver salt, electrolysis of (MULDER), A., ii, 724.
 uranyl salts and its double salts, behaviour of, towards water (ZEHE-
 NTER), A., i, 424.
- Acetic acid**, *p*-aminobenzoylmethyl, *p*-acetylaminobenzoylmethyl, acetyl-
 amino-*o*-tolylmethyl, and *p*-amino-
m-dimethylbenzoylmethyl esters
 (KUNCKELL), A., i, 663.
*di*bromo-*p*-hydroxymesityl ester (AU-
 WERS, TRAUN, and WELDE), A.,
 i, 167.
 bromomethyl ester (HENRY), A., i, 537.
 ethyl ester, rate of hydrolysis of
 (GOLDSCHMIDT and MESSER-
 SCHMITT), A., ii, 200.
 influence of sugars on the velocity
 of hydrolysis of (COHEN), A.,
 ii, 716.
 solubility of, in aqueous salt solu-
 tions (EULER), A., ii, 196.
 methyl, ethyl, propyl, and *isobutyl*
 esters, rate of hydrolysis of, at
 various temperatures (PRICE), A.,
 ii, 528.
 methyl ester, rate of hydrolysis of
 (COJAZZI), A., i, 327; (DE HEMP-
 TINNE), A., ii, 199; (CAJOLA and
 CAPELLINI), A., ii, 394.
 action of strong aqueous soda on, in
 presence of methyl alcohol and
 acetone (CUNIASSE), A., ii, 175.
 phenyl, *p*-tolyl, and thymyl esters,
 transformation of, into the corre-
 sponding benzoates (BODROUX), A.,
 i, 224.
- Acetic acid**, picryl ester, action of diazo-
 methane on (v. PECHMANN), A.,
 i, 313.
α-santalyl ester (v. SODEN), A., i, 677.
 trimethylenepicryl and pyrazoline-
 dimethylenepicryl esters (v. PECH-
 MANN), A., i, 313.
- Acetic acid**, amino-. See Glycine.
 bromo- and chloro-, esters, action of
 hexamethylenetetramine on (Loc-
 QUIN), A., i, 589.
 chloro-, action of, on diphenylthio-
 semicarbazide (v. WALTHER and
 STENZ), A., i, 569.
 action of, on thioncarbamates and
 thioncarbanilates (WHEELER and
 BARNES), A., i, 565.
 methyl ester, action of, on tertiary
 bases (CENSI), A., i, 363.
 phenyl ester, reactions of (MOREL),
 A., i, 157, 158.
mono-, *di*- and *tri*-chloro-, dissociation
 constants of, dissolved in mixtures
 of organic solvents and water
 (MORELLO), A., ii, 395.
 action of chloral on (GABUTTI), A.,
 i, 370.
 cyano-, ethyl ester, action of, on ketones
 (GUARESCHI and GRANDE), A.,
 i, 111; (MINOZZI), A., i, 407.
 constitution of the sodium deriv-
 ative of (THORPE), T., 923; P.,
 1900, 113.
 action of bromine and carbon
 disulphide on the sodium deriv-
 ative of (WENZEL), A., i, 536.
 condensation of the sodium deriva-
 tive of, with ethyl *β*-isopropyl-
 acrylate, and with ethyl *α*- and
β-methylacrylates (HOWLES,
 THORPE, and UDALL), T., 943;
 P., 1900, 115.
 iodo- and bromo-derivatives of
 (THORPE and YOUNG), T., 936;
 P., 1900, 115.
 esters of, acyl derivatives of, action
 of, on benzenediazonium and
 diphenyltetrazonium chlorides
 (FAVREL), A., i, 532.
 thiocyanato-, action of phenylhydrazines
 on (HARRIES and KLAMT), A.,
 i, 413.
 derivatives of (FRERICHS and BEC-
 KURTS), A., i, 478.
 esters of, formation and boiling
 points of (WHEELER and BARNES),
 A., i, 565.
- Acetic acid bacteria** (HENNEBERG), A.,
 ii, 297.
- Acetic anhydride** and sulphuric acid,
 action of, on quinones (THIELE
 and WINTER), A., i, 504.

- Acetic anhydride** and sulphuric acid as oxidising agents (THIELE and WINTER), A., i, 500.
- Acetic peroxides**, *mono-* and *tri-chloro-* (VANINO and UHLFELDER), A., i, 371.
- Aceto-**. See also under Parent Substance.
- Acetoacetic acid**, detection and estimation of, in pathological urine (ARNOLD), A., ii, 768.
- estimation of, in urine (SABBATANI), A., ii, 32.
- Acetoacetic acid**, ethyl ester, constitution of, and action of dry silver oxide and ethyl iodide, and dry silver oxide and ethyl iodoacetate on (LANDER), T., 738; P., 1900, 6, 90.
- influence of the solvent on the constitution of (WISLICENUS), A., i, 9.
- affinity and hydrolytic constants of (GOLDSCHMIDT and OSLAN), A., i, 132, 373.
- acetylation of (CLAISEN and HAASE), A., i, 373.
- and substituted acetoacetates, action of, on *p*-aminobenzoic acid, in presence or absence of pyridine (TROEGER), A., i, 226.
- condensation of, with *m*-aminophenols (v. PECHMANN; v. PECHMANN and SCHALL), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- action of phenylcarbimide on (DIECKMANN), A., i, 482.
- condensations of, with sodium ethoxide, and their reversal (DIECKMANN), A., i, 623.
- methyl ester (COHN; COHN and TAUSS), A., i, 350.
- Acetoacetic acid**, α -chloro-, ethyl ester, interaction of, with thiosulphonates (TROEGER and EWERS), A., i, 494.
- Acetol**. See Acetylcarbinol.
- 1-Acetonaphthalide**, 2:4-dinitro-, action of tin and of iron on (MELDOLA and EYNON), T., 1159; P., 1900, 166.
- Acetone**, formation of (SABBATANI), A., i, 536.
- heat of combustion and of formation of (BERTHELOT and DELEPINE), A., ii, 334.
- boiling point of mixtures of, with benzene (HAYWOOD), A., ii, 64.
- vapour pressure relations of mixtures of water and (TAYLOR), A., ii, 529.
- equilibrium between phenol, water, and (SCHREINEMAKERS), A., ii, 393.
- chemical dynamics of the condensation of (KOELICHEN), A., ii, 395.
- action of ammonium cyanide on (v. GULEWITSCH), A., i, 476.
- Acetone**, condensation of, with *iso*-butaldehyde (FRANKE and KOHN), A., i, 206.
- action of Caro's reagent on (v. BAEYER and VILLIGER), A., i, 133, 206, 328.
- methylation of (NEF), A., i, 349.
- action of *iso*amyl nitrite and alcoholic hydrogen chloride on (KISSEL), A., i, 621.
- reactions in water and (ROHLAND), A., ii, 468.
- formation of, in the body (WALD-VOGEL), A., ii, 153.
- testing of (CONROY), A., ii, 374.
- detection of (RIMINI), A., ii, 56.
- detection of, in urine and other secretions (OPPENHEIMER), A., ii, 180.
- estimation of, in urine (SABBATANI), A., ii, 32.
- separation of, from acetoacetic and acetonedicarboxylic acids (SABBATANI), A., ii, 32.
- Acetone**, chloro-, action of, Caro's reagent on (v. BAEYER and VILLIGER), A., i, 329.
- action of, on phenyl-*p*-tolylthiocarbamide (v. WALTHER and STENZ), A., i, 569.
- nitro-, and its phenylhydrazone (LUCAS), A., i, 82.
- Acetonechloroform** (*chloretono*), pharmacology of (ALDRICH and HOUGHTON), A., ii, 358.
- Acetonediamyldisulphone**, amino-, and its salts (POSNER and FAHRENHORST), A., i, 17.
- Acetonedicarboxylic acid**, formation of (DENIGÈS), A., i, 204; (SABBATANI), A., i, 536.
- oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.
- mercury salts and derivatives of (LEY), A., i, 382.
- compound of, with mercuric sulphate, and detection of (DENIGÈS), A., i, 89.
- physiological action of, and estimation of, in urine (SABBATANI), A., ii, 32.
- Acetonedicarboxylic acid**, methyl or ethyl ester, condensation of with benzaldehyde (PETRENKO-KRITSCHENKO and ELTCHANINOFF), A., i, 307.
- ethyl ester, action of ethyl ethoxymethyleneacetoacetate and ethoxymethylenemalonate on (ERRERA), A., i, 33.
- trimethyl ester, condensation of, to trimethyl orcinoltricarboxylate (DOOTSON), T., 1196; P., 1900, 170.

- Acetonedicarboxylic acid**, cyano-, ethyl ester, ethyl derivative, and salts of (DERÔME), A., i, 426.
- Acetonediphenyldisulphone**, amino-, and its platinumchloride (POSNER and FAHRENHORST), A., i, 18.
- Acetone glycosuria** (RUSCHHAUPT), A., ii, 675.
- Acetone peroxide** (v. BAEYER and VILLIGER), A., i, 133, 328.
- Acetonitrile**, action of, on anthranilic acid (BOGERT and GOTTHELF), A., i, 412.
- Acetonuria** (LÜTHJE), A., ii, 229.
- Acetonylacetone**, preparation of (KNORR), A., i, 376.
condensation of, with diethyl oxalate (GRAY), A., i, 376.
- 2-Acetonyl- α -naphthaquinone-3-acetic acid**, ethyl ester of (LIEBERMANN), A., i, 311.
- Acetophenone**, specific heat and heat of vaporisation of (LUGININ), A., ii, 334.
conversion of, into triphenylbenzene (DELACRE), A., i, 603.
bromo-, action of, on piperidine, and on pyridine (SCHMIDT and HARTONG VAN ARK), A., i, 686, 687.
*di*bromo- and *o*-*dichloro*- (WITTORFF), A., i, 422.
- Acetophenoneazobilirubin** (PRÖSCHER), A., i, 571.
- Acetophenophenylacetylene** (NEF), A., i, 21.
- Aceto-*m*-toluidide**, chlorination of (REVERDIN and CRÉPEUX), A., i, 644.
- Acetotoluidides**, *o*- and *p*-, substituted nitrogen chlorides and bromides from (CHATTAWAY and ORTON), T., 789; P., 1900, 102.
- Acetoxime**, spectra of (HARTLEY and DOBBIE), T., 321; P., 1900, 14.
oxidation of (SCHMIDT), A., i, 332.
- p*-**Acetoxy- ψ -cumyl alcohol**, bromide, and iodide, *di*bromo- (AUWERS, TRAUN, and WELDE), A., i, 165, 168.
*di*bromo-*p*- ψ -cumyl ether, *di*bromo- (AUWERS, TRAUN, and WELDE), A., i, 169.
- 4-Acetoxy mesityl bromide**, 2:6-*di*bromo-, ethers from (AUWERS, TRAUN, and WELDE), A., i, 168.
iodide, 2:6-*di*bromo- (AUWERS, TRAUN, and WELDE), A., i, 166.
- Acetoxy mesityl oxide** (*methyl acetoxy-isobutenyl ketone*) (PAULY and LIECK), A., i, 275.
- Acetoxynaphthalic anhydride** and derivatives (ANSELM and ZUCKMAYER), A., i, 175.
- 5-Acetoxy-1-phenyltriazole** (RUPE and LABHARDT), A., i, 259.
- Acetyl**-. See also under Parent Substance.
- Acetyl-*p*-acetaminobenzoic acid**, and chloro- (TROEGER), A., i, 226.
- Acetylacetanilide**, **Acetylaceto- ψ -cumidide**, and **Acetylaceto-*m*- and -*p*-toluidides**, and **Acetyl-*as*-aceto-*m*-xylylide** chloro- (KUNCKELL), A., i, 663.
- Acetylacetone**, action of ethyl mercaptan on (LLAGUET), A., i, 504.
new metallic salts of (GACH), A., i, 276.
- Acetylaconitic acid**, ethyl ester (RUHEMANN and STAPLETON), T., 804; P., 1900, 121.
- o*-**Acetylaminacetophenone**, action of aqueous soda on (CAMPS), A., i, 115.
- 7-Acetyl amino-4-anilino- β -naphthaquinone** (KEHRMANN and WOLFF), A., i, 449.
- 4-*p*-Acetylaminobenzeneazo-1-phenyl-3-methylpyrazolone** (BÜLOW), A., i, 261.
- Acetyl amino-benzoic and -cinnamic acids**, chloro-*m*- and -*p*-, methyl esters (EINHORN and OPPENHEIMER), A., i, 493.
- p*-**Acetylaminobenzoylcarbinol** and its phenylhydrazone (KUNCKELL), A., i, 663.
- Acetyl amino-*m*- and -*p*-hydroxybenzoic acids**, 4- and 3-chloro-, methyl esters (EINHORN and OPPENHEIMER), A., i, 493.
- Acetylaminomethylphenonaphthacridine** ("acetylaminomethyl naphthacridine"), methylation of, and its methyl sulphate (ULLMANN and NAEF), A., i, 689.
- 9-Acetylaminonaphthaphenazine** (KEHRMANN and WOLFF), A., i, 450.
- 7-Acetyl amino- β -naphthaquinone** (KEHRMANN and WOLFF), A., i, 449, 463.
- 7-Acetyl amino-2-naphthol** and its 1-amino-derivative (KEHRMANN and WOLFF), A., 449.
- α* -*p*-**Acetylaminophenylazoacetoacetic acid**, its ethyl ester and amides (BÜLOW), A., i, 261.
- 2-Acetyl amino-7-phenylnaphthaphenazonium 7-bromide** (KEHRMANN and WOLFF), A., i, 464.
- 2-Acetyl amino-12-phenylisonaphthaphenazonium salts** (KEHRMANN and WOLFF), A., i, 463.
- Acetylaminosalicylic acid**, 5- and 3-, chloro-, methyl esters (EINHORN and OPPENHEIMER), A., i, 493.
- 1-*o*- and -*p*-Acetyl amino-*p*- and -*o*-tolyl-2:5-dimethylpyrrole-3:4-dicarboxylic acid**, ethyl esters (BÜLOW), A., i, 690.

- Acetylaniline**, *p*-chloro- (KUNCKELL), A., i, 663.
- Acetylanthranil**, formation of (BREDT and HOF), A., i, 229.
- Acetylanthranilic acid** (ERDMANN), A., i, 189.
chloro-, methyl ester (EINHORN and OPPENHEIMER), A., i, 493.
- Acetylation** in presence of pyridine (MINUNNI), A., i, 214.
with acetic anhydride in aqueous solution (PINNOW), A., i, 214.
of primary and secondary amines (MUSSELIUS), A., i, 334.
- Acetylbenzoyl-*i*-diphenylethylenediamine** (JAPP and MOIR), T., 612; P., 1899, 211.
- β*-Acetylisobutyric acid**, mercury salts and derivatives of (LEY), A., i, 382.
- Acetylcarbamide**, cyano- (TRAUBE), A., i, 416.
- Acetylcarbinol** (*acetol*) from propylene glycol (KLING), A., i, 129.
its condensation product, phenylhydrazone, -osazone, and semicarbazone (PERATONER and LEONARDI), A., i, 551.
- Acetyl-chloro- and -bromo-aminobenzenes** (*phenyl acetyl nitrogen chlorides and bromides*), and their chloro- and bromo-derivatives, transformation of (CHATTAWAY and ORTON), T., 798; P., 1900, 112.
- Acetylchloroamino-mono-, -di-, and -trichlorobenzenes** (*chlorophenyl acetyl nitrogen chlorides*) (CHATTAWAY, ORTON, and HURTLEY), T., 800; P., 1900, 125.
- Acetyl-chloro- and -bromo-aminotoluenes**, *o*- and *p*- (*o*- and *p*-*tolyl acetyl nitrogen chlorides and bromides*) and their chloro- and bromo-derivatives (CHATTAWAY and ORTON), T., 790; P., 1900, 102.
- Acetylchloromorphide** (SCHRYVER and LEES), T., 1024; P., 1900, 143.
- 1-Acetylcoumarone** and its bromide, and 4-bromo- and 4-chloro-, and their oximes (STOERMER), A., i, 655.
- Acetyl- ψ -cumidine**, chloro-, and chloronitro- (KUNCKELL), A., i, 664.
- γ -Acetyl- β -diethylacetoacetic acid**, ethyl ester (DIECKMANN), A., i, 624.
- 1-Acetyl-4 : 4-dimethyldihydrodithiazine**, 2:6-dicyano- (HELLSING), A., i, 518.
- Acetyldiphenylamide**, and its sulphonic acid, α -*di-p*-nitro- (GNEHM and WERDENBERG), A., i, 93.
- Acetylene**, generation and purification of, (MATHEWS), A., i, 323.
purification of (ULLMANN and GOLDBERG), A., i, 1.
- Acetylene**, disadvantage of using sawdust in the purification of (AHRENS), A., i, 1.
products of the explosion of (MIXTER), A., i, 197.
and mixtures of acetylene and nitrogen, products of the explosion of (MIXTER), A., i, 618.
action of anhydrous aluminium chloride on (BAUD), A., i, 369.
action of copper on (SABATIER and SENDERENS), A., i, 197.
action of cuprous chloride dissolved in potassium chloride solution on (CHAVASTELON), A., i, 470.
action of, on copper oxides and on silver oxide (GOOCH and BALDWIN), A., i, 74.
hydrogenation of, in presence of copper (SABATIER and SENDERENS), A., i, 421.
action of reduced nickel on (SABATIER and SENDERENS), A., i, 471.
action of finely divided platinum, cobalt, and iron on (SABATIER and SENDERENS), A., i, 534.
hydrogenation of, in presence of reduced iron or cobalt, or finely divided platinum (SABATIER and SENDERENS), A., i, 470, 471.
action of hypochlorous and hypobromous acids on (WITTORFF), A., i, 421.
oxidation of (BASCHIERI), A., i, 534.
action of hydrogen peroxide on (CROSS, BEVAN, and HEIBERG), A., i, 534.
as a laboratory fuel (LACHMAN), A., ii, 593.
compounds of, with cuprous and potassium chlorides (CHAVASTELON), A., i, 470.
detection of, by ammoniacal copper solutions and hydroxylamine (ILOSVAY DE NAGY ILOSVAY), A., ii, 52.
- Acetylene purifiers**, estimation of chromic acid in (ULLMANN and GOLDBERG), A., i, 1.
- Acetylenedicarboxylic acid**, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.
- Acetylenedicarboxylic acid**, ethyl ester, preparation of (RUHEMANN and BEDDOW), T., 1121.
condensation of, with β -ketonic esters and with benzamidine and with guanidine (RUHEMANN and STAPLETON), T., 804; P., 1900, 121.
action of phenols on (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.

- Acetylenedicarboxylic acid**, ethyl ester, condensation of, with phenyl mercaptan (RUHEMANN and STAPLETON), T., 1181; P., 1900, 168.
- Acetylguanidine**, cyano- (TRAUBE), A., i, 416.
- 3-Acetyl-4-hydroxyisocarbostyryl** and its isomeride (GABRIEL and COLMAN), A., i, 689.
- Acetylmalonanilic acid**, ethyl ester, formation of (DIECKMANN), A., i, 482.
- Acetylmethylcyclohexanone** and a ketonic acid from (LESER), A., i, 430.
- Acetylmethylhexoic acid** (LESER), A., i, 430.
- Acetylmethylnaphthindenequinone-carboxylic acid**, ethyl ester (MICHEL), A., i, 670.
- Acetylmethylnitrolic acid**, isomeric compounds, $C_6H_8O_4N_2$, from (STEFFENS), A., i, 74.
- β -Acetyliso- β -pentene- $\alpha\alpha$ -dicarboxylic acid**, ethyl ester (*ethyl mesityl-oxide-malonate*) PAULY and LIECK, A., i, 275.
- Acetylphenethylthiocarbamide** and its isomeride (HUGERSHOFF), A., i, 156.
- Acetylphenylacetylene** and its diiodide (NEF), A., i, 21.
action of potash on (MOUREU and DELANGE), A., i, 397.
- Acetylphenylglycine-*o*-carboxylic acid** and its diethyl ester (VORLÄNDER and WEISSBRENNER), A., i, 295.
- Acetylphenylhydrazonedi-*p*-tolylguanidine** (SCHALL), A., i, 464.
- Acetylphenylthiocarbamide**, and its isomeride (HUGERSHOFF), A., i, 156.
action of phenylhydrazine on, (WHEELER and SANDERS), A., i, 564.
- Acetylphenylurethane** and the action of phenylhydrazine on (WHEELER and SANDERS), A., i, 564.
- β -Acetylpropionic acid**. See Lævulic acid.
- α -Acetylpropionitrile**, and α -chloro- (HENRY), A., i, 538.
- Acetylpropionylsalicylic acid osazone** (AUDEN), P., 1899, 231.
- Acetylpyrrolidone** (TAFEL and STERN), A., i, 557.
- Acetyltartaric acid**, diethyl ester, rotation of (McCRAE and PATTERSON), T., 1096; P., 1900, 161.
- Acetylthiocarbimide**, reactions of, with imino-ethers (WHEELER and SANDERS), A., i, 563.
- Acetyl-*o*-, -*m*-, and -*p*-toluidine**, chloro- (KUNCKELL), A., i, 663.
- Acetyl-*o*- and -*p*-tolylthiocarbamides** and their isomerides (HUGERSHOFF), A., i, 156.
- 5-Acetyl-1:2:3-triazole** and its 4-carboxylic acid, trichloro- (ZINCKE, STOFFEL, and PETERMANN), A., i, 526.
- Acetyl-*cs*-*m*-xylylidine**, chloro- and chloronitro- (KUNCKELL), A., i, 664.
- Acetylxylylidenesulphonic acids** (JUNGHAN), A., i, 389.
- Acetylxylononitrile** (MAQUENNE), A., i, 423, 472.
- Achroodextrin III.**, preparation and properties of (PRIOR and WIEGMANN), A., i, 541.
- Acid** (m. p. 115°) from benzyl cyanide and ethyl fumarate (HENZE), A., i, 347.
(m. p. 279-280°) from the oxidation of ricinine (EVANS), A., i, 309.
- $C_4H_6O_2$, from β -bromoglutaric acid (SSEMENOFF), A., i, 10.
- $C_4H_6O_2$, from β -hydroxyglutaric acid (FICHTER and KRAFFT), A., i, 8.
- $C_6H_5O_3N_3Cl_2$, from the action of sodium hydroxide on aziminotetra-chloroketodihydrobenzene (ZINCKE, STOFFEL, and PETERMANN), A., i, 527.
- $C_7H_{10}O_4$, from the oxidation of isopilocarpine with permanganate (JOWETT), T., 852; P., 1900, 124.
- $C_7H_{12}O_2$, from methylcyclohexanone-oxime and from suberoneisooxime (WALLACH), A., i, 45.
- $C_8H_{10}O_2$, from the action of potassium hydroxide on the methylammonium hydroxide of *cis*-hexahydro-*p*-diethylbenzylaminocarboxylic acid (EINHORN and PAPASTAVROS), A., i, 228.
- $C_8H_{12}O_4$, and $C_9H_{14}O_3$, from verbenone (KERSCHBAUM), A., i, 353.
- $C_9H_{14}O_3$, from the action of sodium and amyl alcohol on phenylamino-acetic acid (EINHORN and PFEIFFER), A., i, 222.
- $C_8H_{16}O_3$, and $C_{10}H_{20}O_4$ (or O_3), from isobutyl nitrite, alcohol, and hydrogen chloride (KISSEL), A., i, 621.
- $C_9H_{12}O_4$, and $C_{14}H_{18}O_4$, from cyclopentanone and ethyl succinate (STOBBE and FISCHER), A., i, 179.
- $C_9H_{14}O_2$ (two), from the hydrolysis of methyl bromodihydro- ψ -launolate (LEES and PERKIN), P., 1900, 19.
- $C_9H_{14}O_2$, $C_9H_{16}O_2$, and $C_9H_{16}O_3$, from camphoric anhydride and aluminium chloride (BLANC), A., i, 134.
- $C_9H_{14}O_4$, from the reduction of β -hydroxy-*s*-tetramethylglutaric acid (MICHAILENKO and JAVORSKY), A., i, 586.

- Acid**, $C_9H_{14}O_8$, from the oxidation of *isotauronic acid* (BLANC), A., i, 329.
- $C_9H_{15}BrO_2$ (two), from the action of hydrogen bromide in glacial acetic acid on ψ -campholactone (LEES and PERKIN), P., 1900, 18.
- $C_9H_{16}O_3$ (two), from the action of alkalis on ψ -campholactone (LEES and PERKIN), P., 1900, 18.
- $C_{10}H_9O_5N$, from permanganate and chloroacetyl-*o*-toluidine (KUNCKELL), A., i, 664.
- $C_{10}H_{10}O_4$, from the oxidation of *isosafrrole* (BOUGAULT), A., i, 495.
- $C_{10}H_{12}O_3$, from the aldehyde $C_{10}H_{12}O_3$, from the oxidation of anethole (BOUGAULT), A., i, 495.
- $C_{10}H_{16}O_4$, from α -*di*bromocamphor and nitric acid (LAPWORTH and CHAPMAN), T., 310; P., 1900, 4.
- $C_{10}H_{16}O_6$, and $C_{10}H_{14}O_6$, from the oxidation of dihydrocampholenic acid (MAHLA and TIEMANN), A., i, 507.
- $C_{11}H_{12}O_7$, $C_{20}H_{20}O_9$, and $C_{20}H_{20}O_{10}$, from the oxidation of tetramethyl-hæmatoxylin (PERKIN and YATES), P., 1900, 108.
- $C_{11}H_{16}O_4$, and $C_{11}H_{18}O_5$, from the action of hydrogen cyanide and hydrochloric acid on camphonic acid (LAPWORTH and CHAPMAN), T., 450; P., 1900, 56.
- $C_{11}H_{20}O_4$, from the oxidation of undecenoic acid (THOMS), A., i, 622.
- $C_{12}H_{12}O_6$, and $C_{19}H_{18}O_9$, from the oxidation of trimethylbrazilin (GILBODY, PERKIN, and YATES), P., 1900, 106.
- $C_{12}H_{14}O_6$, from the oxidation of *isopule* (BOUGAULT), A., i, 495.
- $C_{13}H_{18}O_5$, from methylenebisdihydroresorcinol and caustic alkali (VORLÄNDER and KALKOW), A., i, 99.
- $C_{14}H_{14}O_4$, from the oxidation of *isomethyl*eugenol (BOUGAULT), A., i, 495.
- $C_{14}H_{16}O_8$, and $C_{20}H_{36}O_5$, from oil of savin (FROMM), A., i, 402.
- $C_{18}H_{34}O_3$, and $C_{18}H_{34}O_5$, from the fusion of dihydroxystearic acid with potash (LE SUEUR), P., 1900, 91.
- $C_{21}H_{26}O_{12}$, from ethyl cetipate and hydrogen cyanide (THOMAS-MAMERT and WEIL), A., i, 427.
- $C_{22}H_{20}O_2$, from the hydrogen chloride additive product of benzylidenedibenzyl ketone (GOLDSCHMIEDT and KNÖPPER), A., i, 35.
- $C_{24}H_{22}O_6N_2$, or $C_{24}H_{22}O_5N_3$, from benzoylulnic acid (PATERNO), A., i, 662.
- Acid**, $C_{24}H_{24}O_4$, from the bromo-derivative of 2:5-diphenylethylenetetrahydropyrone-3-carboxylic acid (COEN), A., i, 308.
- Acid amides**, formation and stability of (MEYER and v. LUTZAU), A., i, 643. structure of (MENSCHUTKIN), A., i, 337. determination of the constitution of, cryoscopically (AUWERS and DOHRN), A., ii, 134.
- Acid chloride**, conversion of an, into an anhydride, by the action of haloid acids (VANDEVELDE), A., i, 272.
- Acidimetry** (ASTRUC), A., ii, 572. of organic basic acids (ASTRUC), A., i, 199; ii, 508; (IMBERT and ASTRUC), A., i, 226. of cacodylic acid (IMBERT), A., i, 145. of substituted malonic acids compared with that of corresponding normal dibasic acids (MASSOL), A., i, 200.
- Acids**, thermal value of the acidity of (DE FORCHAND), A., ii, 527, 528. velocity of reaction of, in organic solvents (GEIGER), A., ii, 394. relation of the taste of, to their degree of dissociation (KAHLENBERG), A., ii, 270, 646; (RICHARDS), A., ii, 391. action of, on nitrogen iodide (CHATTAWAY and STEVENS), A., ii, 722. toxic action of, on *Lupinus albus* (TRUE), A., ii, 303; (KAHLENBERG and AUSTIN), A., ii, 747. standardising (SEYDA), A., ii, 44; (THIELE and RICHTER), A., ii, 620. precautions necessary in using phenolphthalein as an indicator in titrating (MAGNIER DE LA SOURCE), A., ii, 620. separation and identification of (ABEGG and HERZ), A., ii, 436; (FRESENIUS), A., ii, 754. from ethyl cyanoacetate, method of separating the *cis*- and *trans*-modifications of (THORPE), T., 934; P., 1900, 114.
- Acids, acyclic and cyclic**, mixed anhydrides of (BÉHAL), A., i, 8.
- Acids, fatty**, determination of the constitution of (CROSSLEY and LE SUEUR), T., 83; P., 1899, 225. determination of the solidifying point of (FREUNDLICH), A., ii, 250. iodation of (ZERNOFF), A., i, 327. dibasic, heat of neutralisation of, compared with that of substituted malonic acids (MASSOL), A., i, 200. containing *isopropyl*, action of nitric acid on (BREDT and KERSHAW), A., i, 136.

- Acids, fatty**, dibasic, action of phenyl-carbimide and -thiocarbimide on (BÉNECH), A., i, 340.
 oxidation of, by acid potassium permanganate (PERDRIX), A., i, 582.
 identification of (AUWERS), A., i, 84.
 saturated, constitution of (KOMPPA), A., i, 201.
 dissociation constants of (WALKER), T., 397.
 substituted (VANDEVELDE), A., i, 272.
 unsaturated, preparation of, by boiling dibasic β -hydroxy-acids with aqueous sodium hydroxide (FICHTER and DREYFUS), A., i, 426.
 free, estimation of, volumetrically (SWOBODA), A., ii, 514.
 halogenated, action of water on (DE BARR), A., i, 76.
 lower, estimation and separation of (SCHÜTZ), A., ii, 250.
 saturated, affinity coefficients of (BILLITZER), A., i, 7.
 unsaturated, from mercaptols and disulphones of ketonic acids (POSNER), A., i, 5.
 action of hypobromous and hypochlorous acids on (MELIKOFF), A., i, 536.
 estimation of, in fish oils (BULL), A., ii, 250, 325.
 volatile, in beer (SPAETH), A., ii, 177.
 origin of, in butter (ZUNTZ and USSOW), A., ii, 669.
 estimation of, in butter by the Leffmann-Beam's glycerol-soda process (SEYDA), A., ii, 772.
- Acids, inorganic**, complex (KEHRMANN and RÜTTIMANN), A., ii, 145.
 weak, hydrolysis of the sodium salts of, in relation to their dissociation constants (WALKER), A., ii, 268.
 very weak, dissociation constants of (WALKER and CORMACK), T., 5; P., 1899, 208.
- Acids, organic**, isolation and separation of (SCHOORI), A., ii, 449.
 electrolysis of the alkali salts of (PETERSEN), A., ii, 522.
 acidimetry of (ASTRUC), A., i, 199; ii, 508; (IMBERT and ASTRUC), A., i, 226.
 oxidation of, in presence of ferrous salts (FENTON and JONES), T., 69; P., 1899, 224.
- Acids of the oxalic acid series**, derivatives and physical properties of (MEERBURG), A., i, 144.
- Acids of the sugar group**, formation of, and their methylene derivatives (CROWES and TOLLENS), A., i, 205.
- Acids, unsaturated**, coloured, dibasic, transformation of, into colourless stereoisomerides (STOBBE), A., i, 659.
- Acids, weak**, characterisation of (HANTZSCH), A., i, 94.
 change in the strength of, by the addition of salts (ARRHENIUS), A., ii, 201.
- Acids.** See also Pseudo-acids.
- Acids** (or their salts or derivatives). See also :—
- Abietic acid.
 - Abietinolic acid.
 - Abietolic acid.
 - Acetic acid.
 - Acetoacetic acid.
 - Acetonedicarboxylic acid.
 - Acetonyl- α -naphthaquinone-3-acetic acid.
 - Acetyl-*p*-acetaminobenzoic acid.
 - Acetylaconitic acid.
 - Acetylaminobenzoic acids.
 - Acetylaminocinnamic acids.
 - Acetylaminohydroxybenzoic acids.
 - Acetylaminophenylazoacetoacetic acid.
 - Acetylaminosalicylic acid.
 - Acetylaminotolyl-2 : 5-dimethylpyrrole-3 : 4-dicarboxylic acid.
 - Acetylanthranilic acid.
 - β -Acetylisobutyric acid.
 - α -Acetyl- β -diethylacetoacetic acid.
 - Acetyldiphenylamidesulphonic acid.
 - Acetylenedicarboxylic acid.
 - Acetylmalonanilic acid.
 - Acetylmethylhexoic acid.
 - Acetylmethylnaphthindenequinone-carboxylic acid.
 - Acetylmethylnitrolic acid.
 - β -Acetyliso- β -pentene- $\alpha\alpha$ -dicarboxylic acid.
 - Acetylphenylglycine-*o*-carboxylic acid.
 - Acetyltartaric acid.
 - 5-Acetyl-1 : 2 : 3-triazole-4-carboxylic acid.
 - Acetylxyldinesulphonic acids.
 - Acrylic acid.
 - n*-Adipic acid.
 - Aldehydo-*o*-aminobenzoic acid.
 - Aldehydophenoxyacetic acid.
 - Allylmalonic acids.
 - isoAmylcitraconic acid.
 - isoAmylsuccinic acid.
 - Amylxanthic acid.
 - Anhydrosbis-5-methoxy-7-methyl-diketohydrindene-4-carboxylic acid.
 - β -Anhydrohomocamphoronic acid.
 - Anhydromalic acid.
 - Anhydro- α -naphthaquinone-2-acetone-dicarboxylic acid.

Acids. See:—

Anhydrocispentamethylenetricarboxylic acid.
 Aniliminocarbaminothioglycollic acid.
 Anilinoacetic acid.
 Anilinoembelic acid.
 Anilinomalonic acid.
 Anilinophenylglycine-*o*-carboxylic acid.
 Anisylanthranilic acid.
 Anthranilic acid.
 Anthranilphenylacetic acid.
 9-Anthranol-2-carboxylic acid.
 Anthraquinone-2-carboxylic acid.
 Antipyrine-1-*p*-benzoic acid.
 Arabic acid.
 Asparagine.
 Azelaic acid.
 Aziminoethylenedicarboxylic acid.
 Aziminoethylenedicarboxylic acid.
 Azobenzene-4 : 3' : 5'-trisulphonic acid.
 Barbituric acid.
 Benzeneazodiacetylsuccinic acid.
 Benzeneazo- β -naphthylcarbamie acid.
 Benzenecyanonitroic acid.
 Benzenediazonium-*o*-sulphonic acid.
 Benzenedimetaphosphoric acids.
 Benzene-*o*-disulphonic acid.
 Benzenestearosulphonic acid.
n- α -Benzenesulphaminobutyric acid.
 Benzenesulphonic acid.
 1 : 2 : 3 : 4-Benzenetetracarboxylic acid.
pp-Benzhyldroldicarboxylic acid.
 Benzhydroxamic acid.
 Benzoic acid.
 Benzonitroic acid.
 Benzophenonedicarboxylic acids.
 Benzophenonediphenyldiketonedicarboxylic acid.
 Benzo- γ -pyronecarboxylic acid.
 Benzoylactic acids.
 Benzoylauronic acid.
 Benzoyl- α -aminobutyric acids.
p-Benzoylanilinocinnamylformic acid.
 Benzoylanthranilic acid.
 Benzoyl-*l*-aspartic acid.
o-Benzoylbenzenesulphonic acid.
 Benzoylbenzoic acids.
 Benzoylcarbaminothioglycollic acid.
 Benzoylglutamic acid.
 Benzoyliminothiocarbonic acid.
 Benzoylleucine.
 β -Benzoyl- α -methylpropionic acid.
 4-Benzoylnicotinic acid.
 Benzoylphenetidinesulphonic acid.
 Benzoyl-*d*-phenylalanine.
s-Benzoylphenylhydrazine-*p*-sulphonic acid.
 Benzoylphenyloxamic acid.
 β -Benzoylpropionic acid.
 Benzoyltyrosines.

Acids. See:—

Benzoylusnic acid.
 Benzylanilinosulphonic acids.
 Benzylformhydroxamic acid.
 Benzylidenecisacetonedicarboxylic acid.
 Benzylidenecampholic acid.
 Benzylsulphide-*p*-dicarboxylic acid.
 β -Benzylsulphoneallylphthalamic acid.
 Bisdiazooacetic acid.
 Butanedicarboxylic acids.
*cyclo*Butanedicarboxylic acid.
 Butanetetracarboxylic acid.
sec.-Butylbenzene-*p*-sulphonic acid.
 Butylenedicarboxylic acid.
 5-Butylisophthalic acid.
 Butyltoluic acids.
 Butyric acids.
*iso*Butyrylactic acid.
 Butyrylacetooacetic acids.
 Cacodylic acid.
 Camphenilanic acid.
 Campholic acid.
 Campholytic acid.
 Camphonic acid.
 Camphononic acid.
 Camphopyric acid.
 Camphorenic acid.
 Camphoric acids.
l-*iso*Camphoric acid.
 Camphoronic acid.
*iso*Camphoronic acid.
 Camphoroxalic acid.
 Camphoroximeacetic acid.
 Canadic acid.
 Canadinolic acid.
 Canadolic acid.
 Carbaminothioglycollic acid.
 Carbaniloisobutyric acid.
 Carbethoxythiocarbamic acid.
 Carbiminothioglycollic acid.
 Carbonylhydroferrocyanic acid.
 α -Carboxyphenoxybutyric acids.
 α -Carboxyphenoxypropionic acid.
 α -Carboxyphenoxyisovaleric acid.
o-Carboxyphenylglycollic acid.
 Carminic acid.
 Carpic acid.
 α -Carvacroxybutyric acids.
 α -Carvacroxypropionic acid.
 α -Carvacroxyisovaleric acid.
 Carvonedihydrodisulphonic acid.
 Cascarillie acid.
 Catechobis- α -oxybutyric acids.
 Catechobis- α -oxypropionic acid.
 Catechobis- α -oxyisovaleric acid.
 Catecholacetic acid.
 Cetipic acid (*oxalldiacetic acid*).
 Chrysenic acids.
 Chrysoidinesulphonic acid.
 Chrysoketonecarboxylic acid.
 Chrysophanic acid.

Acids. See :—

Cinchomeronic acid.
Cinenic acid.
Cineolic acid.
Cinnamhydroxamic acid.
Cinnamic acids.
Cinnamylidenecetic acids.
b-Citralidenecyanoacetic acid.
Citrapyrotartaric acid (*methylsuccinic acid*).
Citrazinic acid.
Citric acid.
Cochinelic acid.
Comenic acid.
Coumarilic acid.
Coumaroxyacetic acid.
Crotonic acid.
 α - ψ -Cumenoxypropionic acid.
Cuminuric acid.
*iso*Cyanic acid.
Decanedicarboxylic acid.
Decarboxy*di*bromocarmine acid.
Decarbusnic acid.
Decenoic acids.
Decoic acids.
Dehydracetic acid.
Dehydrocamphoric acid.
Diacylamino phenolsulphonic acid.
Diacyltantranilic acid.
Diacylpropionic acid.
Diacylpyroterebic acid.
Diacyltartaric acid.
Diamyldisulphoneacetonephthalamic acid.
Dianilino-orthophosphoric acid.
Diaspartidodiaspartic acid.
Diazoacetic acid.
Diazoaminobenzenedi-*p*-sulphonic acid.
Diazoazobenzenetrisulphonic acid.
Diazo benzene-*m*-hydrazinobenzoic acid.
Diazo benzene piperidesulphonic acid.
Diazo benzene-*o*-sulphonic acid.
Diazo benzoic acid.
Diazolone-1-propionic acid.
Diazosalicylic acid.
Diazotetronosulphonic acid.
Dibenzoylsuccinic acid.
Dibenzoyltyrosine.
Dibenzylacetoacetic acid.
Dibenzylcyanoacetic acid.
Dibenzylidenesuccinic acid.
Dibenzylmalonic acid.
s-*Diisobutylsuccinic acids*.
Di-*p*-carboxybenzylacetic acid.
2,6-Dicarboxyphenol.
Dicranumtannic acid.
 β -Diethothiobutyric acid.
 β -Diethothio- α -ethylbutyric acid.
 β -Diethothio-glutaric acid.
 β -Diethothio- α -methylbutyric acid.
 β -Diethoxypropionic acid.
Diethoxysuccinic acid.

Acids. See :—

2'-Diethylaminobenzoylbenzoic acid.
2'-Diethylaminobenzylbenzoic acid.
p-Diethylaminophenylacetic acid.
 β -Diethylidisulphoneglutaric acid.
 α -Diethylidisulphonepropionic acid.
 α -Diethylidisulphonevaleric acid.
Diethyluric acid.
Dihydroanthracene-2-carboxylic acid.
Dihydrocampholenic acid.
Dihydrocampholytic acid.
Dihydrocinnamhydroxamic acid.
Dihydroisolauroic acid.
Dihydropyrazine-2:3-diacetic acid.
Dihydropyridinedicarboxylic acids.
Dihydropyridinedicarboxylic acid.
Dihydroxamic acid.†
2-*mp*-Dihydroxybenzylidene-5-methoxy-7-methyl-1:3-diketohydrindene-4-carboxylic acid.
Dihydroxybutanetetra-carboxylic acid.
Dihydroxydiphenylmethane-2:4'-dicarboxylic acid.
Dihydroxynaphthalenecarboxylic acids.
2:6-Dihydroxypyridine-3:4-dicarboxylic acid.
Dihydroxystearic acid.
Dihydroxytrimelic acid.
Diindoneacetic acid.
Diindonecyanoacetic acid.
3:5-Dimethoxybenzoic acid.
Dimethoxyphenanthrene-9-carboxylic acids.
Dimethylacetoacetic acid.
Dimethylallylmalonic acid.
2'-Dimethylaminobenzoylbenzoic acid.
2'-Dimethylaminobenzylbenzoic acid.
6-Dimethylamino-3-methylcoumarilic acid.
 $\alpha\alpha$ -Dimethyl- α_1 -isoamylsuccinic acid.
o-Dimethyl-*o*-benzylbenzoic acid.
Dimethylbutanetricarboxylic acid.
 $\alpha\alpha$ -Dimethyl- α_1 -isobutylsuccinic acid.
 α -Dimethylisocrotonic acid (2-*di-methyl-3-butinoic acid*).
Dimethyldihydropyridinedicarboxylic acid.
Dimethylenegalaconic acid.
Dimethylenexylynic acid.
 $\alpha\alpha$ -Dimethyl- α_1 -ethylsuccinic acid.
Dimethylfumaric acid.
Dimethylglutaconic acid.
Dimethylglutaric acids.
Dimethylglutolactonic acids.
Dimethylcyclohexanecarboxylic acid.
 $\gamma\delta$ -Dimethyl- β -hexenoic acid.
 $\alpha\alpha$ -Dimethyl- α_1 -propylsuccinic acids.
2:6-Dimethylpyridine-3:5-dicarboxylic acid.
2:6-Dimethylpyridyl-4-sulphonic acid.
Dimethylpyrinedicarboxylic acid.

Acids. See:—

- 3-Hydroxy-5-alkyl-1:2:4-triazole-1-propionic acids.
- 3-Hydroxy-*i*-amylaminobenzoic acids.
- Hydroxybenzeneazodiphenylaminesulphonic acid.
- Hydroxybenzoic acids.
- 2-Hydroxy-1-benzyl- α -naphthindole-quinonecarboxylic acid.
- Hydroxybutyric acids.
- Hydroxycamphenilanic acid.
- α -Hydroxycamphopyric acid.
- 4-Hydroxyisocarboxystyryl-3-carboxylic acid.
- 3-Hydroxy-2:6-dicarboxy-1:4-pyronic acid.
- α -Hydroxy- α -dimethylheptoic acid (α -hydroxy- α -methylisohexylacetic acid).
- ϵ -Hydroxy- β -dimethyloctoic acid.
- Hydroxyethanesulphonic acid.
- Hydroxyethoxynaphthalene-2-carboxylic acid.
- Hydroxyethylsulphonemethylene-sulphinic acid.
- 5-Hydroxyfurfuran-2-carboxylic acid.
- β -Hydroxyglutaric acid.
- ζ -Hydroxyheptoic acid.
- p*-Hydroxyhydratropic acid.
- Hydroxymereuribenzoic acid.
- Hydroxymethanesulphonic acid.
- Hydroxymethoxynaphthalene-2-carboxylic acid.
- 3-Hydroxy-4-methoxyphenanthrene-9-carboxylic acid.
- β -Hydroxy- β -methyl- ϵ -heptenoic acid.
- Hydroxymethylhexoic acid.
- α -Hydroxy- α -methylisohexylacetic acid.
- 2-Hydroxymethyl-5-phenyl-3-triazolone-1-propionic acid.
- 4-Hydroxy-2-methyltrimesic acid.
- 8-Hydroxynaphthalene-4:6-disulphonic acid.
- 2-Hydroxy- α -naphthaquinone-3-acetic acid.
- 2-Hydroxy-1-naphthylacetic acid.
- 2-Hydroxyisonicotinic acid.
- Hydroxypentanesulphonic acid.
- o*-, *m*-, and *p*-Hydroxyphenoxyacetic acids.
- Hydroxyphenylacetic acids.
- m*-Hydroxyphenylaminocrotonic acid.
- 4-Hydroxy-1-phenylpyrazole-3-carboxylic acid.
- 5-Hydroxyisophthalic acid.
- Hydroxypivalic acid.
- α -Hydroxyisopropyl- γ -hexenoic acid.
- 4-Hydroxypyrazole-3-carboxylic acid.
- Hydroxypyrimidinecarboxylic acid.
- Hydroxypyruvic acid.
- 8-Hydroxyquinolinecarboxylic acid.

Acids. See:—

- o*-Hydroxyquinolineglycuronic acid.
- o*-Hydroxyquinolinesulphonic acid.
- Hydroxystearic acid.
- Hydroxyterephthalic acid.
- β -Hydroxy-*s*-tetramethylglutaric acid.
- Hydroxytoluic acids.
- 1-Hydroxy-1:2:3-triazole-4:5-dicarboxylic acid.
- β -Hydroxy- $\alpha\alpha\beta$ -trimethyladipic acid.
- α - and γ -Hydroxyvaleric acids.
- Hygic acid (1-methylpyrrolidine-2-carboxylic acid).
- 7-Idonic acid.
- 7-Idosaccharic acid.
- Iminohydroxamic acid.
- Indeneoxalic acid.
- Indigotintrisulphonic acid.
- Indonecyanoacetic acid.
- Indonedicarboxyloglutaconic acid.
- Indonemalonic acid.
- Japanese acid.
- 2-Ketohexamethylenecarboxylic acid.
- 2-Ketopentamethylenecarboxylic acids.
- 2-Ketophenemorpholinecarboxylic acids.
- Lactic acid.
- Lactopheninsulphonic acid.
- Lævulinic acid.
- Laricnicolic acid.
- Larinolic acid.
- iso*Lauroic acid.
- iso*Lauronolic acid.
- Leucine.
- Lutidinedicarboxylic acid.
- 2:6-Lutidyl-4-sulphonic acid.
- Malic acids.
- Malonic acid.
- Meconic acid.
- Mercuriacetic acid.
- Mercurisalicylic acid.
- Metahemipinic acid.
- Metapurpuric acid.
- Methazonic acid.
- β -Methoxy- β -benzylacrylic acid.
- p*-Methoxycinnamic acid.
- 6-Methoxyglauconic acid.
- Methoxyhydratropic acid.
- 6-Methoxyhydroglauconic acid.
- 5-Methoxy-7-methyl-1:3-diketohydrindene-4-mono- and -2:4-dicarboxylic acids.
- Methoxyphenanthrene-10-carboxylic acids.
- 4-Methoxyphenanthrene-9-carboxylic acid.
- β -*o*-Methoxyphenoxycinnamic acid.
- o*-Methoxyphenylacetic acid.
- β -Methoxy- β -phenylacrylic acid.
- p*-Methoxyphenylcarbamic acid.
- α -*o*-Methoxyphenyl- β -*o*-nitroacetylvanillylacrylic acid.

Acids. See:—

α -*o*- and -*p*-Methoxyphenyl-*o*-nitrocin-
namic acids.
Methylacetyl-*p*-acetaminobenzoic acid.
 α - and β -Methylacrylic acids.
 α - and β -Methyladipic acids.
Methylaminoembellic acid.
 α -Methyl- α ′-isocamylsuccinic acids.
Methylaniliminocarbaminothio-
glycollic acid.
Methylanthranilic acid.
1-Methylbenzoxazole-4-carboxylic acid.
 α -Methyl- α ′-isobutylglutaric acid.
 β -Methyl-*tert*.-butylhydracrylic acid.
4-Methyl-6-butyl-1:2-phthalic acid.
 α -Methyl- α ′-isobutylpropanetricar-
boxylic acid.
 $\alpha\alpha_1$ -Methylisobutylsuccinic acids.
 α - and β -Methylbutyric acids.
2-Methylcamphenepyrrole-3-carb-
oxylic acid.
2-Methylcamphenepyrroline-3-carb-
oxylic acid.
Methylcarboxyresorcylic acid.
Methylcyanoacetic acid.
Methyldilituric acid.
Methylenemalononic acids.
Methylethylacrylic acid.
Methylethylhydracrylic acid.
6-Methylglauconic acid.
 α - and β -Methylglutaric acids.
 β -Methyl- $\alpha\epsilon$ -heptadienoic acid.
6-Methylhydroglauconic acid.
1-Methyl-2-ketohexamethylenecarb-
oxylic acid.
4-Methyl-2-ketopentamethylenecarb-
oxylic acid.
Methylmalonic acid (*isosuccinic acid*).
2-Methyl- α -naphthimidazolesulphonic
acid.
Methyloxaluric acid.
1-Methylcyclopentanonecarboxylic
acid.
 α -Methyl-*p*-isopropylcinnamic acid.
 α -Methyl- β -isopropylglutaric acids.
 $\alpha\alpha_1$ -Methylpropylsuccinic acids.
1-Methyl-1-propyltrimethylenedicarb-
oxylic acid.
3-Methylpyrazole-1-*p*-benzoic acid.
2-Methylpyridine-6-carboxylic acid.
1-Methylpyrrolidine-2-mono- and -2:2-
di-carboxylic acids.
Methylresorcinolacetic acid.
Methylsuccinic acid.
 α -Methyltetronic acid.
Methyluracilcarboxylic acid.
Methyluric acids.
 γ -Methylvaleric acid (*isohexoic acid*).
Methylvioluric acid.
Mucic acid.
Naphtha- β -ketopentamethyleneazine-
carboxylic acid.

Acids. See:—

Naphtha- β -ketopentamethyleneazine-
4-sulphonic acid.
Naphthalene-1:3:5-trisulphonic acid.
Naphthalic acid (1:8-Naphthalenedi-
carboxylic acid).
Naphthaquinoneacetoacetic acids.
Naphthaquinonebenzoylacetic acid.
 α -Naphthaquinonedimalonic acid.
 α -Naphthaquinoneisondenedicar-
boxylic acid.
 β -Naphthaquinone-4-malonic acid.
Naphthaquinoneoxalacetic acid.
Naphthaquinoneoxalinediacetic acids.
1:2-Naphthazine-6:6′-disulphonic
acid.
 α -Naphtholcarboxylic acid.
 α -Naphthol-2-carboxy-3-malonic acid.
 α - and β -Naphthoxybutyric acids.
 β -Naphthoxycinnamic acids.
 α - and β -Naphthoxypropionic acids.
 α - and β -Naphthoxyisovaleric acids.
 α -Naphthoyl-*o*-benzoic acid.
 α - and β -Naphthylcarbamic acid.
Naphthylcamphoformeneaminecarb-
oxylic acids.
Naphthylhydrazidoxalhydroxamic
acids.
Naphthylthiosulphonacetoacetic acids.
*iso*Nicotinic acid.
“Nitroic acids.”
Norpic acid.
Nucleic acids.
Nucleothymic acid.
Octanedicarboxylic acids.
 $\gamma\delta$ -*iso*Octenic acid.
Otenoic acid.
Oleic acid.
Opianic acid.
Orcinobis- α -oxybutyric acids.
Orcinobis- α -oxypropionic acid.
Orcinobis- α -oxyisovaleric acid.
Orcinoltricarboxylic acid.
Oxalacetic acid.
Oxaldiacetic acid.
Oxalic acid.
 γ -Oxalocrotonic acid.
Oxaluric acid.
 α -Oximinoadipic acid.
 α -Oximino- β - and - γ -methyladipic
acids.
 α -Oximinopimelic acid.
Oximinopropionic acid.
Oxyhydroditeresantallic acid.
Oxymethylphosphoric acid.
Parabanic acid.
Pentamethylene-tri- and -hexa-carb-
oxylic acids.
Pentanedicarboxylic acid.
Pentane-tri- and -hexa-carboxylic
acids.
2-cycloPentanonecarboxylic acid.

Acids. See:—

Pentylenedicarboxylic acid.
 Perezone (*pipitzahoic acid*).
 Phenacetyl tartaric acid.
p-Phenethyl carbamidesulphonic acid.
 Phenoxyacetic acid.
 α -Phenoxybutyric acids.
 Phenoxy cinnamic acids.
 Phenoxy fumaric acid.
 Phenoxy maleic acid.
 Phenoxy propionic acid.
 α -Phenoxy isovaleric acid.
 Phenylacethydroxamic acid.
 Phenylacetic acid.
 ψ -Phenylacetic acid.
 α -Phenyl-4-acetoxy-3-methoxy cinnamic acid.
d-Phenylalanine.
 Phenylallene carboxylic acid.
 Phenylaminoacetic acid.
 Phenyl *iso*amylaminoacetic acid.
 1-Phenyl benzoxazole-4-carboxylic acid.
 Phenyl *isobutyric* acid.
 Phenyleamphoformeneamine carboxylic acid.
 Phenyl carbamic acid.
 Phenyl cinnamic acids.
 Phenyl dimethoxy cinnamic acids.
 Phenyl dimethyl dihydropyridine carboxylic acid.
 Phenyl dimethyl pyrazoleacetic acid.
p-Phenylene bis-2:5-dimethyl pyrrole-3:4-dicarboxylic acid.
p-Phenylenediamine-2:6-disulphonic acid.
 Phenylenedioxydiacetic acids.
 Phenylethylhydantoic acid.
 β -Phenyl- α -ethyl propionic acid.
 Phenyl fumaric acid.
 Phenyl glycine- α -carboxylic acid.
 Phenyl hydroxyhomocampholic acid.
 Phenyl iminodiphenylacetic acid.
 1-Phenyl-4-ketopyrazoline-3-carboxylic acid.
 1-Phenyl-4-ketopyrazolone-3-carboxylic acid.
 Phenyl methoxy cinnamic acids.
 Phenyl methylbutanonoic acid.
 1-Phenyl-5-methyl-3:4-dicarboxylic acid.
 1-Phenyl-3-methylpyrazole-Bz-*p*-carboxylic acid.
 1-Phenyl-5-methylpyrazole-3:4-dicarboxylic acid.
 1-Phenyl-3-methylpyrazolone azobenzene azoacetoacetic acid.
 Phenyl paraconic acids.
 Phenyl propionic acid.
 Phenyl pyruvic acid.
 Phenylsulphonacetic acid.

Acids. See:—

Phenylsulphonpropionic acid.
 Phenyltartramic acid.
 Phenylthiocarbamic acid.
 Phenyl *dithio* carbazinic acid.
 Phenylthioncarbazinic acid.
 Phenylthiosulphonacetoacetic acid.
 Phenyltolylmethane-*p*-carboxylic acid.
 3-Phenyl-1:4:6-trimethyluric acid.
 β -Phenyluraminocrotonic acid.
 Phenyluric acids.
 Phloretic acid.
 Phloroglucinolcarboxylic acid.
 o -Phthalaldehydic acid.
 Phthalic acids.
 Phthalide-di- and tri-carboxylic acids.
 Phthalonamic acid.
 Phthalonic acid.
 Phthaloylphthalic acid.
 Phthaloyltoluylbenzoic acid.
 Phthalylaminoacetic acid.
 α -Phthalyliminobutyric acid.
 α -Phthalyliminopropionic acid.
 Picric acid.
 Pilocarpoeic acid.
 Piluvic acid.
i-Pinocampholenic acid.
 Pinolic acid.
i-Pinonic acid.
 Pipitzahoic acid (*perezone*).
 Plasmic acid.
 Polyaspartic acids.
 Prehnitic acid.
 Propanedicarboxylic acid.
*cyclo*Propanedicarboxylic acid.
 Propiolic acid.
 Propionic acid.
p-Propionylphenyl carbamic acid.
 Propiophenonecarboxylic acid.
 β -Propoxy- β -phenylacrylic acid.
 β -*iso*Propylacrylic acid.
 1-*iso*Propyl benzoxazole-4-carboxylic acid.
 α -*iso*Propylbutyric acid (*heptoic acid*).
 β -*iso*Propylglutaric acid.
 α -*iso*Propylidene- γ -hexenoic acid.
 β -*iso*Propyllævulinic acid.
*iso*Propylketocoumarancarboxylic acid.
 Propylmalonic acid.
 β -*p-iso*Propylphenyl- α -methylhydrazylacrylic acid.
 $\alpha\alpha$ -1-Propyl *iso*propylsuccinic acid.
 Protocatechuic acid.
*iso*Purpuric acid.
 Pyrazole-3:5-dicarboxylic acid.
 Pyridinecarboxylic acids.
 Pyridine-2:6-dicarboxylic acid.
 Pyridoylacetic acids.
 Pyridyl-2-sulphonic acid.
 Pyridyl-2-thioglycollic acid.
 Pyrogallolsulphonic acid.

Acids. See:—

Pyromeconic acid.
 Pyromucic acids.
 α -Pyrone- α' -carboxylic acid.
i-Pyrotartaric acid (*methylsuccinic acid*).
*iso*Pyrotritaric acid.
 2-Pyrrolidinedicarboxylic acid.
 Pyrroline-2-carboxylic acid.
 Pyruvic acid.
 Pyruvogycollic acid.
 Quinobis- α -oxybutyric acids.
 Quinobis- α -oxypropionic acid.
 Quinobis- α -oxyisovaleric acid.
 Quinolacetic acid.
 Quinolinediphenyldicarboxylic acid.
 Quinolinic acid.
 Quinoxalidoneacetic acid.
 Resorcinobis- α -oxybutyric acids.
 Resorcinobis- α -oxypropionic acid.
 Resorcinobis- α -oxyisovaleric acid.
 Resorcinolacetic acid.
 Resorcinol-*o*-azosalicylic acid.
 Rhamminotronic acid.
 Ricinoleic acid.
 Rubeanic acid (*dithio-oxamide*).
 Sabinenic acid.
 Saccharic acid.
 Salicylanilinoacetic acid.
 Salicylic acid.
 α -Salicyloxybutyric acids.
 α -Salicyloxypropionic acid.
 α -Salicyloxyisovaleric acid.
 Santalic acid.
 Santonic acids.
 Semicarbazinopropionic acid.
 Semicarbazyleamphoformenecarboxylic acids.
 Solanthic acid.
 Sorbic acid.
 Stearic acid.
 Strophanthic acid.
 Styrylcarbamic acid.
 Succinic acid.
 Succinylsuccinic acid.
p-Sulphobenzeneazodiphenylaminesulphonic acid.
p-Sulphocinnamic acid.
 4-Sulpho-1:2-naphthaquinoxalinediacetic acid.
 Sulphonaphthylstearic acid.
 Sulphophenylstearic acid.
 Sulphosalicylic acid.
 α -Tanacetogendicarboxylic acid.
 Tanacetonedicarboxylic acid.
 Tannic acid.
 Tartaric acids.
 Tartromalic acids.
 Tartronic acid.
 Telfairic acid.
 Terephthalic acid.
 Terephthalic acid.

Acids. See:—

Tetrahydrofurfuran-2:5-dicarboxylic acid.
 Tetrahydroquinolyl-2-propionic acid.
 Tetrahydroxylic acid.
 Tetramethylapionolcarboxylic acid.
cis-Tetramethylene-1:3-dicarboxylic acid.
 Tetramethylglutaric acids.
 Tetramethylpyrrolidinedicarboxylic acid.
 Tetronic acid.
 Tetronosulphonic acid.
 α - ψ -Thebaolcarboxylic acid.
 Thiocyanic acid.
 Thioncarbamic acid.
 Thioncarbamilic acid.
 Thymic acid.
 α -Thymoxybutyric acids.
 α -Thymoxypropionic acid.
 α -Thymoxyisovaleric acid.
o-Toluenazotolylcarbamic acid.
 Toluenedicarboxylic acid.
o-Toluidinoembelic acid.
p-Toluoilbenzoic acids.
 Toluoylcarbinolbenzoic acid.
p-Toluoil- β -propionic acid.
 Toloric acids.
 Tolyisobutyric acid.
p-Tolylcarbazine- α -carboxylic acid.
 α -Tolyoxybutyric acids.
 β -Tolyoxycinnamic acids.
 Tolyoxyfumaric acids.
m-Tolyoxymaleic acid.
 Tolyoxypropionic acid.
 α -Tolyoxyisovaleric acid.
p-Tolythiosulphonacetacetic acid.
 1:2:3-Triazole-4-mono- and -4:5-dicarboxylic acids.
 2:3:4-Trihydroxybenzoic acid.
 Trihydroxybutyric acid.
i-Trihydroxyglutaric acid.
 Triketosantoncic acid.
 Trimercuriacetic acid.
 2:3:4-Trimethylbenzoic acid (*prehnitic acid*).
 $\alpha\beta\beta$ -Trimethylbutane- $\alpha\alpha\delta$ -tricarboxylic acid.
 $\alpha\beta\beta$ -Trimethylbutyric acid.
 2:4:6-Trimethylhydripyridinedicarboxylic acid.
 Trimethylhydroresorecylic acid.
trans-Trimethylenedicarboxylic acid (*cyclopropanedicarboxylic acid*).
 $\alpha\beta\beta$ -Trimethylglutaric acid.
 2:4:5-Trimethylhippuric acid.
 Trisbisdiazomethanetetracarboxylic acid.
 Tyrosines.
 Undecane-di- and -tri-carboxylic acids.
 Undecenoic acid.
 Uric acid.
 Urochloralic acid.

Acids. See:—

- Usnic acid.
- Usmonic acid.
- Valeric acids.
- γ -Valerolactone- $\beta\gamma$ -dicarboxylic acid.
- Veratric acid.
- Vinylacetic acid.
- Vinylthioethylenethioglycollic acid.
- Violuric acid (*nitrosobarbituric acid*).
- Xanthic acid.
- m*-Xylylcarbanic acid.
- α -Xylyloxybutyric acids.
- α -Xylyloxypropionic acids.
- α -Xylyloxyisovaleric acids.
- o*-Xylylphthaloylic acid.

Aconite alkaloids (DUNSTAN and READ), T., 45; P., 1899, 206.

Aconitine, action of iodine on (KIPPENBERGER), A., ii, 777.
value of tests for (MECKE), A., ii, 121.

Aconitum Napellus, comparison of the properties of the alkaloids from, with those from Japanese aconite (DUNSTAN and READ), T., 63.

Acraldehyde (*acrolein*), detection of (LEWIN), A., ii, 179.

Acridine derivatives, action of formaldehyde on (KOENIGS), A., i, 190.

Acridine series, syntheses in the (ULLMANN and NAEF), A., i, 360, 361, 689.

Acroses, α - and β -, from glycollic aldehyde (JACKSON), T., 129; P., 1899, 238.

Acrylic acid, anhydrous (BILMANN), A., i, 473.

methods for the preparation of (BILMANN and WÖHLK), A., i, 425.

preparation of, from allyl alcohol (BILMANN), A., i, 425.

preparation of, from glycerol (WÖHLK), A., i, 425.

Acrylic acid, α -chloro-, and its ethyl ester (MELIKOFF), A., i, 536.

Actinium (DEBIERNE), A., ii, 20, 350.

Address, presidential (THORPE), T., 555; P., 1900, 77.

***n*-Adipic acid** (*butanedicarboxylic acid*), thermochemistry of (MASSOL), A., ii, 260.

Adlumia cirrhosa, protopine from (SCHLOTTERBECK), A., ii, 746.

Adsorption, experiments on (VRIENS), A., ii, 202.

AFFINITY, CHEMICAL:—

Association, molecular, in liquids (BERTHELOT), A., ii, 335, 337.

Chemical affinity (VAUBEL), A., ii, 264, 590.

Affinity coefficients of saturated fatty acids (BILLITZER), A., i, 7.

AFFINITY, CHEMICAL:—

Affinity constants of acids containing a ring of seven carbon atoms (ROTH), A., ii, 590.

of nitrous acid (SCHÜMANN), A., ii, 264.

Dilution law (BANCROFT), A., ii, 186.

Mass law, the, and physical reactions (LINCOLN), A., ii, 392.

Modulus law (PONSOT), A., ii, 392.

Chemical change, function of the medium in (BRÜHL), A., ii, 11.

Chemical reactions (MICHAEL), A., i, 321.

characteristics of certain (GIBSON), A., ii, 198.

auxiliary (WEGSCHEIDER), A., ii, 199, 532.

kinetics of, with auxiliary reactions (WEGSCHEIDER), A., ii, 199.

influence of magnetism on (DE HEMPTINNE), A., ii, 707.

in water and acetone (ROHLAND), A., ii, 468.

in solution (PONSOT), A., ii, 337.

in heterogeneous systems (WILDERMANN), A., ii, 200.

limited, in homogeneous systems (PONSOT), A., ii, 392.

reversible: lecture experiments (MILLER and KENRICK), A., ii, 534.

between hydrogen chloride and silver (JOUNIAUX), A., ii, 139.

between metals (COLSON), A., ii, 140.

Catalytic actions, theory of (EULER), A., ii, 532.

an addition to the theory of (WEGSCHEIDER), A., ii, 532.

of alkali in oxidation processes (MANCHOT), A., i, 300.

of various substances in oxidation processes (v. GEORGIEVICS and SPRINGER), A., i, 560.

of some metals (SULC), A., ii, 395.

Catalytic agents, influence of, on oxidation (JORISSEN and REICHER), A., ii, 200.

Catalysis of normal salts (EULER), A., ii, 269.

Chemical equilibrium and electromotive force (ROTHMUND), A., ii, 183; (DANNEEL), A., ii, 464.

numerical laws of (BOUDOUARD), A., ii, 199.

of heterogeneous systems, the law of (WILDERMANN), A., ii, 200.

in a system of four gases (PÉLABON), A., ii, 265.

in the partition of an acid between ammonia and cadmium hydroxide (HERZ), A., ii, 532.

AFFINITY, CHEMICAL :—

Chemical equilibrium in the partition of an acid between zinc hydroxide and ammonia (HERZ), A., ii, 337.
 between hydrogen peroxide and "persulphuric acid" (LOWRY and WEST), T., 955; P., 1900, 127.
 between manganese salts and ammonia (HERZ), A., ii, 68.
 in precipitated silver bromide and iodide (THIEL), A., ii, 521.
 of carnallite (VAN'T HOFF and MEYERHOFFER), A., ii, 12.
 between benzenesulphoncamphylamide and sodium hydroxide solution (DUDEN), A., ii, 267.

Decomposition by sodium of organic halogen compounds dissolved in amyl alcohol (LÖWENHERZ), A., ii, 338.

Hydrolysis of salt solutions (LEY), A., ii, 67, 731; (BRUNER), A., ii, 268.

in organic solvents (CAJOLA and CAPPELLINI), A., ii, 394.

of the sodium salts of weak inorganic acids, in relation to their dissociation constants (WALKER), A., ii, 268.

of metallic salts (CAREARA and VESPIGNANT), A., ii, 647.

of chlorine compounds of gold, platinum and tin on standing, and under the influence of light (KOHLEBAUSCH), A., ii, 408.

of silicon and titanium tetrachlorides (V. KOWALEWSKY), A., ii, 731.

of stannic chloride solutions (V. KOWALEWSKY), A., ii, 256.

of amylogen and starch (SYNIEWSKI), A., i, 78.

of polysaccharides (ŠULC), A., ii, 395.

of phenol and its *mono*-, *di*-, and *tri*-chloro-, cyano-, and nitro-derivatives (HANTZSCH), A., i, 95.

Partition of ammonia between chloroform and aqueous solutions of metallic salts (DAWSON and McCRAE), T., 1241; P., 1900, 172.

Velocity of acetylation of primary and secondary amines (MUSSELIUS), A., i, 334; (MENSCHUTKIN), A., i, 341.

Velocity of graded actions (WALKER), A., ii, 198.

Velocity of change of white into grey tin (COHEN and VAN EIJK), A., ii, 83, 212, (COHEN), A., ii, 212.

Velocity of combination of secondary amines and alkyl bromides (MENSCHUTKIN), A., i, 335, 341.

AFFINITY, CHEMICAL :—

Velocity of decomposition of hydrogen peroxide by colloidal platinum (BREDIG and MÜLLER V. BERNECK), A., ii, 214.

Velocity of diazotisation (SCHÜMANN), A., ii, 264.

Velocity of displacement of halogens from halogenated fatty acids (DE BARR), A., i, 76.

Velocity of esterification of phosphoric acid by glycerol (IMBERT and BELUGOU), A., i, 130.

Velocity of formation of esters from benzoic chloride and fatty alcohols (BRUNER and TOLLOZKO), A., ii, 648.

of bromobenzene (BRUNER), A., ii, 647.

of carbamide from solid ammonium cyanate (WALKER and WOOD), T., 30; P., 1899, 209.

of olefines (BRUSOFF), A., i, 322.

Velocity of hydrolysis in heterogeneous systems (GOLDSCHMIDT and MESSERSCHMITT), A., ii, 200.

of ethyl acetoacetate (GOLDSCHMIDT and OSLAN), A., i, 132, 373.

of ethyl acetate, effect of sugars on the (COHEN), A., ii, 716.

of methyl acetate (COJAZZI), A., i, 327; (DE HEMPTINNE), A., ii, 199; (CAJOLA and CAPPELLINI), A., ii, 394.

of esters of formic, acetic, and propionic acids at various temperatures, (PRICE), A., ii, 528.

of ethyl dimethylacetoacetate (GOLDSCHMIDT and OSLAN), A., i, 373.

Velocity of inversion of sugar, influence of normal salts on (ARRHENIUS), A., ii, 201.

Velocity of oxidation, influence of catalytic agents on the (JORISSEN and REICHER), A., ii, 200.

Velocity of reaction before complete equilibrium and before transition points (WILDERMANN), A., ii, 200.

influence of the medium on the (BUCHBÖCK), A., ii, 590.

in isomeric benzene derivatives, influence of chemically indifferent solvents on (MENSCHUTKIN), A., i, 341.

of acids in organic solvents (GEIGER), A., ii, 394.

of acetic acid and primary and secondary amines (MUSSELIUS), A., i, 334; (MENSCHUTKIN), A., i, 341.

AFFINITY, CHEMICAL:—

Velocity of reaction between benzaldehyde and sodium hydroxide (POMERANZ), A., i, 552.

of bromine on phenylsulphon-acetic and -propionic acids (RAMBERG), A., ii, 717.

of hydroxy-methane-, -ethane-, and -pentane-sulphonic acids (CO-JAZZI), A., i, 327.

Velocity of solidification and viscosity of supercooled liquids (WILSON), A., ii, 712.

Agar, equilibrium between water and (HARDY), A., ii, 396.

Agaricus campestris, composition of (ZEGA), A., ii, 498.

Agaricus phalloides, constituents of (KOBERT), A., ii, 156.

Agglutination, mechanism of (ERNST and ROBEY), A., ii, 560.

of blood corpuscles by chemical agents (HÉDON), A., ii, 665.

Agoniatin, identity of, with plumieride (FRANCHIMONT), A., i, 680.

AGRICULTURAL CHEMISTRY—

ANIMALS, DAIRY PRODUCTS, FEEDING EXPERIMENTS:—

Bullocks, metabolism in full-grown, with maintenance and fattening foods (KELLNER and KÖHLER), A., ii, 563, 565, 566.

Calves, milk and artificial foods for fattening (DICKSON and MALPEAUX), A., ii, 566.

Cows, feeding experiments on (RAMM and MINTROP), A., ii, 39; (VIRCHOW), A., ii, 93; (ALBERT), A., ii, 103; (RAMM and MÜLLER), A., ii, 104, 503; (ARENANDER), A., ii, 236; (HILLS), A., ii, 236, 568; (HAGEMANN), A., ii, 502.

See also Butter, Milk, and Feeding experiments.

Dogs, hæmorrhage and transfusion in (DAWSON), A., ii, 291, 417.

results of the extirpation of liver in (SALASKIN and ZALESKI), A., ii, 607.

feeding experiments on (VIRCHOW), A., ii, 93.

Horses, metabolism in (PFEIFFER), A., ii, 554.

amount of iron present in the hæmoglobin of (LAPICQUE and GILARDONI), A., i, 467.

blood molasses as food for (LILIEN-THAL), A., ii, 502.

Pigs, feeding experiments on (VIRCHOW), A., ii, 93.

blood molasses as food for (LILIEN-THAL), A., ii, 682.

AGRICULTURAL CHEMISTRY: ANIMALS:—

Ruminants, metabolism in (HAGEMANN), A., ii, 222.

Sheep, influence of asparagine and ammonia on proteid metabolism in (KELLNER, KÖHLER, BARNSTEIN, ZIELSTORFF, EWERT, and WEDEMEYER), A., ii, 417.

DAIRY PRODUCTS:—

Butter from various countries compared (ESTCOURT), A., ii, 452.
composition of (RICHMOND), A., ii, 696.

Danish, composition of (FABER), A., ii, 696.

origin of volatile fatty acids in (ZUNTZ and USSOW), A., ii, 669.

effect of food on the hardness and composition of (BARTLETT), A., ii, 567.

effect of food on the quality of (HILLS), A., ii, 236, 568.

effect on, of feeding cows with cotton and sesame cake (THORPE), A., ii, 237.

effect on, by feeding cows with sesamé cake (WEIGMANN), A., ii, 40; (SCHEIBE; VIETH), A., ii, 236.

chemical action of mould on (HANUŠ and STOCKÝ), A., ii, 772.

rancidity of (BROWNE), A., ii, 115; (HANUŠ), A., ii, 634.

nutritive value of margarine and, compared (BERTARELLI), A., ii, 224.

relative digestibility of margarine and, in the human intestine (LÜHRIG), A., ii, 224, 667.

methods of analysis. See Main Index.

Cheese, detection of margarine in (FASCETTI and GHIGI), A., ii, 377.

"**Manur**," composition of (ZEGA), A., ii, 503.

Cream, composition of (RICHMOND), A., ii, 696.

Milk, composition of (RICHMOND), A., ii, 696.

constancy in the composition of, and detection of its adulteration (TIMPE), A., ii, 251.

relation between the specific gravity, fat, and solids not fat in (LEONARD), A., ii, 376.

effect of fatigue on the quantity and quality of (HILLS), A., ii, 567.

source of the fat of (CASPARI), A., ii, 153.

composition of the fat of (BROWNE), A., ii, 55.

AGRICULTURAL CHEMISTRY: DAIRY PRODUCTS:—

Milk, changes in the constants of fat of, under the influence of feeding (RUFFIN), A., ii, 324.

effect of feeding fat on the quality of (BARTLETT), A., ii, 567, 568; (HILLS), A., ii, 568; (HENRIQUES and HANSEN), A., ii, 668.

proteids of (STORCH), A., i, 266.

galactase, the proteolytic ferment of, and its action on the proteids of (BABCOCK and RUSSELL; v. FREUDENREICH), A., i, 712.

sour (RICHMOND and HARRISON), A., ii, 451.

effect of different substances on the curdling of (BOKORNY), A., ii, 297.

value of certain antiseptics in (BABCOCK, RUSSELL, and VIVIAN), A., ii, 560.

effect of preservatives on (SCHULZE), A., ii, 251.

boric acid and formaldehyde as preservatives of (RIDEAL and FOULERTON), A., ii, 560; (HEHNER), A., ii, 561.

methods of analysis. See Main Index.

FEEDING EXPERIMENTS:—

Asparagine, nutritive value of (BRUTSKUS), A., ii, 237.

Atriplex semibaccata, composition and food value of (JAFFA), A., ii, 569.

Bassia nut and **cake** as food for cows (RAMM and MÖLLER), A., ii, 503.

Beans, French and Hungarian (KOSUTÁNY, WINDISCH, v. HERICS-TÓTH, v. SZÉLL, and FALTIN), A., ii, 750.

Beet molasses of different origin (KELLNER, PETERS, ZAHN, and STRIGEL), A., ii, 566.

Blood molasses as food for cows (RAMM and MINTROP), A., ii, 39; (LILIENTHAL), A., ii, 502; (STROHMER), A., ii, 681.

as food for horses and pigs (LILIENTHAL), A., ii, 502, 682.

Brewery residues as food for cows (RAMM and MÖLLER), A., ii, 104.

Cakes, various, value of, as foodstuffs (v. KNIERIEM), A., ii, 39.

Cane-sugar, maize-gluten, and malt-germ molasses as foods for cows (RAMM), A., ii, 749.

Cotton seed oil, feeding experiments on dogs and pigs with (VIRCHOW), A., ii, 93.

English cake as food for cows (RAMM and MÖLLER), A., ii, 503.

AGRICULTURAL CHEMISTRY: FEEDING EXPERIMENTS:—

Feeding stuffs, digestibility of some non-nitrogenous constituents of some (FRAPS), A., ii, 748.

Fodders, composition of (EMMERLING), A., ii, 614.

Gluten- and starch-meal as food for bullocks (KELLNER and KÖHLER), A., ii, 563; (KELLNER, KÖHLER, BARNSTEIN, ZIELSTORFF, LÜHRIG, and MACH), A., ii, 565.

Gluten- and starch-meal and earth nut oils as food for bullocks (KELLNER and KÖHLER), A., ii, 563; (KELLNER, KÖHLER, ZIELSTORFF, HERING, EWERT, and LEHMANN), A., ii, 565.

Grain, mixed, and maize, as food for cows (FRIS), A., ii, 615.

Maize-germ molasses, as food for cows (SCHULZE), A., ii, 502.

Meadow hay, oat straw, starch meal, and molasses as food for bullocks (KELLNER and KÖHLER), A., ii, 563; (KELLNER, KÖHLER, LEHMANN, HERING, WEDEMEYER, and METHNER), A., ii, 566.

Meadow hay, wheat straw, starch meal, extracted rye straw, and molasses as food for bullocks (KELLNER and KÖHLER), A., ii, 563; (KELLNER, KÖHLER, LEHMANN, HERING, WEDEMEYER, VOLHARD, PETERS, v. GILLERN, and ZAHN), A., ii, 566.

Molasses as food for cows (HOPPE), A., ii, 681.

non-saccharine matter of, as food for cows (RAMM and MOMSEN), A., ii, 750.

Oil cakes, composition of (EMMERLING), A., ii, 614.

Palm kernels, crushed, as food for cows (VIETH), A., ii, 682.

Peat-meal molasses, (WOY), A., ii, 682.

Rape cake, development and injurious effect of mustard oil in (SJOLLEMA), A., ii, 613.

Rye as food (v. KNIERIEM), A., ii, 748.

Tropon as food for cows (RAMM and MÖLLER), A., ii, 503.

Vetches as food (v. KNIERIEM), A., ii, 749.

PLANTS.

PLANT COMPOSITION AND METABOLISM:—

Plants, formation and decomposition of albumin in (SCHULZE), A., ii, 612.

AGRICULTURAL CHEMISTRY: PLANTS:—

Plants, formation of amino-acids and proteids in (EMMERLING), A., ii, 612.

distribution of cane-sugar in (ANDERSEN), A., ii, 561.

chromium, molybdenum, and vanadium in (DEMARÇAY), A., ii, 235.

copper in (MACDOUGAL), A., ii, 235.

formation of formaldehyde in (POL-LACCI), A., ii, 160, 426.

lithium in (TSCHERMAK), A., ii, 235.

occurrence of myosin in (BOKORNY), A., ii, 746.

proteids in (BOKORNY), A., ii, 426 ; (EMMERLING), A., ii, 612.

conditions of the production of living proteids in, and their importance in the respiration of (PALLADIN), A., ii, 612.

proteid metabolism in (SCHULZE), A., ii, 745.

amount of sulphur in (BOGDANOFF), A., ii, 160.

genesis of terpenic constituents in (CHARABOT), A., i, 241, 303 ; ii, 101, 361, 362.

relation of the ash to the height of (MILLS, IMRIE, and GRAY), A., ii, 496.

action of dry and moist air on (EBERHARDT), A., ii, 561.

effect of manuring on the inner processes of some (MÜLLER-THURGAU), A., ii, 506.

nutrition of, with organic nitrogenous compounds (LUTZ), A., ii, 233.

absorption of iodine by (BOURCET), A., ii, 100.

absorption of soluble salts by (DEMOUSSY), A., ii, 161.

utilisation of potash in soil by (SCHLÆSING), A., ii, 306.

assimilation by, in soils containing different amounts of sand (GROSS), A., ii, 363.

chlorophyllous, phosphorus compound first formed in (POSTERNAK), A., ii, 679.

etiolated, changes produced in (ANDRÉ), A., ii, 428.

medicinal ashes of some (GRIFFITHS), A., ii, 679.

importance of, used for green-manuring in increasing the amount of nitrogen in the soil (LARSEN), A., ii, 505.

PLANTS:—

Ashes of some medicinal plants (GRIFFITHS), A., ii, 679.

VOL. LXXVIII. ii.

AGRICULTURAL CHEMISTRY: PLANTS:—

Cell, chemistry of the (SOSNOWSKI), A., ii, 100.

production of sucrose from dextrose in the (GRÜSS), A., ii, 361.

Chlorophyll, chemistry of (MARCHLEWSKI and SCHUNCK), T., 1080 ; P., 1900, 148.

formation of, in the dark (RADAIS), A., ii, 362.

decomposition of, by oxidising enzymes (WOODS), A., ii, 234.

assimilation of, induced by sunlight filtered through leaves (GRIFFON), A., ii, 159.

Chlorophyllous assimilation, influence of pressure on (FRIEDEL), A., ii, 679.

in indoor plants (GRIFFON), A., ii, 426.

Leaves, yellow colouring matters of, and their spectrum (SCHUNCK), A., ii, 36.

Root nodules of alder and *Elæagnus* (HILTNER), A., ii, 426.

of leguminous plants, nature and functions of (STOKLASA and DAWSON), A., ii, 610.

value of, in lupin cultivation (DEHÉRAIN and DEMOUSSY), A., ii, 238.

leguminous, action of, in water cultures (NOBBE and HILTNER), A., ii, 234.

Root secretions (CZAPEK), A., ii, 234.

Roots, influence of nitrogen on the growth of (MÜLLER-THURGAU), A., ii, 361.

Seeds, action of anæsthetic vapours on (COUPIN), A., ii, 35.

effect of ferments on the germination of (THOMSON), A., ii, 496.

influence of the temperature of liquid hydrogen on the germinative power of (THISELTON-DYER), A., ii, 300.

changes in the mineral and organic constituents of, during germination (ANDRÉ), A., ii, 159, 300.

digestion of the reserves in, during germination, and their assimilation by the seedlings (MAZÉ), A., ii, 300.

germinating, proteolytic ferments of (HARLAY), A., ii, 744.

occurrence and action of proteolytic ferments in (BUTKEWITSCH), A., ii, 744.

Stems, absorption of water and dissolved substances by (BRÉAL), A., ii, 35.

AGRICULTURAL CHEMISTRY: PLANTS:—

Tissues, fufuroids of (CROSS, BEVAN, and REMINGTON), A., ii, 611.

Respiration, importance of "living" proteid in (PALLADIN), A., ii, 613.

Plant growth, importance of Bacteria in (STOKLASA), A., ii, 360.

sugar as an aid to (GOLDING), A., ii, 617.

toxic action of compounds of the alkaline-earth metals towards (COUPIN), A., ii, 363; (SUZUKI), A., ii, 561.

poisonous properties of sodium chloride and sea water towards (COUPIN), A., ii, 236.

Germination (MAQUENNE), A., ii, 678.
action of calcium hydroxide on (WINDISCH), A., ii, 614.

PLANTS:—

Agaricus campestris, composition of (ZEGA), A., ii, 498.

Agaricus phalloides, constituents of (KOBERT), A., ii, 156.

Apios tuberosa, composition of (BRIGHETTI), A., ii, 498.

Apple trees, material for the nutrition of (HOTTER), A., ii, 745.

Astragalus caryocarpus, fruit of (FRANKFORTER), A., ii, 747.

Barley, manurial experiments on (HANAMANN), A., ii, 41, 752; (PRIANISCHNIKOFF), A., ii, 237; (BAESSLER), A., ii, 307.

Barley grain, relation between the weight of, and percentage of nitrogen in the (JOHANNSEN), A., ii, 363.

Beans, effect of alinit and nitragin on (CAMPBELL), A., ii, 433.

Beetroot (sugar), composition of very rich (GRAFTIAU), A., ii, 430.

cultivation of (WILFARTH and WIMMER), A., ii, 365.

experiments with, in 1898 (STONE, CLINTON, KINSELY, and CAVANAUGH), A., ii, 501.

amount of mineral matter and nitrogen in, variously manured and in different soils (SCHNEIDEWIND), A., ii, 364.

assimilation by (WILFARTH), A., ii, 163.

effect of perchlorate in sodium nitrate on the growth of (STOKLASA), A., ii, 305.

seed, does nitrogenous manure injure? (WILFARTH), A., ii, 366.

influence of potash manures on the development of (STOKLASA), A., ii, 163.

physiological importance of fufuroids in (STOKLASA), A., ii, 100.

AGRICULTURAL CHEMISTRY: PLANTS:—

Beetroot (sugar) excrescences, mites in (BUBAK), A., ii, 501.

Beet leaves, dextrose and levulose in (LINDER), A., ii, 302.

estimation of oxalic acid in (BÜLOW), A., ii, 322.

Cereals, use of alinit in the cultivation of (MALPEAUX), A., ii, 498.

Clover hay, manurial experiments on (CAMPBELL), A., ii, 429.

Coniferous plants, arginine from (SUZUKI), A., ii, 562.

Conifer seeds, decomposition products of proteids of (SCHULZE and WINTERSTEIN), A., ii, 101.

Copper beech, distribution of the ash constituents in sections of the (HORNBERGER), A., ii, 496.

Cork oak (TASSELLI), A., ii, 750.

Crops, basic constituents of (WARINGTON), A., ii, 569; (DEMOUSSY), A., ii, 570.

effect of rain and of the nature of the soil on the production of (PAGNOUL), A., ii, 306.

intermediate, accumulation of nitrogen by the cultivation of (MAERCKER), A., ii, 102.

Euonymus arthropurpureus, dulcitol in the bark of (HOEHNEL), A., ii, 427.

Euonymus japonicus, "honey" of (MAQUENNE), A., ii, 161.

Fenugreek, composition of (D'ANCONA), A., ii, 364.

Fenugreek seeds, carbohydrates in (BOURQUELOT and HÉRISSEY), A., ii, 301.

enzyme of (BOURQUELOT and HÉRISSEY), A., ii, 233.

Flax, manuring experiments on (OLSCHOWY), A., ii, 500.

Fodder plants, vegetation of (MONVOISIN), A., ii, 303.

Fruit trees, manurial experiments on (STEGELICH), A., ii, 570.

Gramineæ, presence of invertase in some plants of the (O'SULLIVAN), T., 691; P., 1900, 61.

Hay, influence of fermentation on the nutritive value of (HOLDEFLEISS), A., ii, 238.

of *Molinia cærulea* and *Carex Goodenowii*, composition of (IMMENDORFF), A., ii, 162.

Norwegian, composition of (WERENSKIÖLD), A., ii, 304.

Hemp, cultivation of (SAMOGGIA), A., ii, 750.

Hollyhock flowers, composition of (ZAY), A., ii, 563.

AGRICULTURAL CHEMISTRY: PLANTS :—
Hops, manuring of (HANAMANN and KOURINSKY), A., ii, 163.
 bitter principles of (BARTH), A., ii, 746.
Horse beans, experiments with, in different soils (SEISSL and GROSS), A., ii, 430.
Indigo plants, occurrence of indican in the chlorophyll grains of (MOLISCH), A., ii, 101.
Kohl-rabi, manurial experiments on (OTTO), A., ii, 753.
Leguminosæ, accumulation of asparagine in (BRÉAL), A., ii, 301.
 effect of removing the flowers on the assimilation of nitrogen by (SOAVE), A., ii, 496.
Lettuce, manurial experiments on (OTTO), A., ii, 753.
Lotus corniculatus, Italian, composition of (D'ANCONA), A., ii, 161.
Lucerne, cultivation of, at Grignon (DEHÉRAIN), A., ii, 681.
 manuring experiments on (MARCK-ER), A., ii, 41.
Lupina, manuring experiments on (ULBRICHT), A., ii, 240.
 percentage of alkaloids and corn from various (SEMPOLOWSKI), A., ii, 103.
 blue and perennial, alkaloids from (CALSEN), A., i, 186.
 blue, cultivation of (DEHÉRAIN and DEMOUSSY), A., ii, 304.
 white, cultivation of (DEHÉRAIN and DEMOUSSY), A., ii, 238.
 yellow, effect of nitragin and inoculation soil on (ADLER), A., ii, 501.
Lupinus albus, toxic action of acids and of their sodium salts on (TRUE), A., ii, 303; (KAHLENBERG and AUSTIN), A., ii, 747.
Lupinus luteus seedlings, decomposition products of the proteids of (SCHULZE), A., ii, 101.
Maize, manuring experiments on (JENKINS), A., ii, 41; (MAZE), A., ii, 499.
 as a food in Servia (ZEGA and MAJSTOROVIC), A., ii, 39.
Mangel-wurzel, cultivation of, at Grignon (DEHÉRAIN), A., ii, 680.
 experiments with English, German, and French varieties of (WOHLTMANN), A., ii, 501.
 changes in the composition of, during storage (MILLER), A., ii, 430.
Mulberry trees, cultivation of (ALPE), A., ii, 617.

AGRICULTURAL CHEMISTRY: PLANTS :—
Oats, cultivation of, at Grignon (DEHÉRAIN), A., ii, 303.
 manuring with basic slag and super-phosphate (BAESSLER), A., ii, 307.
 effect of alinit and nitragin on (CAMPELL), A., ii, 433.
 distribution of the diastatic enzyme in (MAYER), A., ii, 427.
Olives, compressed, changes in, when stored under different conditions (KLEIN), A., ii, 615.
Olive seeds, composition of, before and after germination (SANT), A., ii, 613.
Parsnip, cultivation of (GUÉPIN), A., ii, 751.
Pear trees, material for the nutrition of (HOTTER), A., ii, 745.
 composition of the branches of, removed by regular thinning (PASSERINI), A., ii, 162.
Peas, manuring experiments on (LUTOSLAWSKI), A., ii, 99.
 germination and growth of, in solutions of salts of fatty acids (LÖVINSON), A., ii, 744, 745.
Phænogams, can barium and strontium replace calcium in? (SUZUKI), A., ii, 561.
Phaseolus multiflorus, changes in the mineral constituents of the seed of, during germination (ANDRÉ), A., ii, 159.
Plane-tree leaves, food-stuffs of (TUCKER and TOLLENS), A., ii, 35.
Potato parings, formation of vanillin in (BRÄUTIGAM), A., ii, 427.
Potato plant, distribution of the diastatic enzyme in the (MAYER), A., ii, 427.
Potatoes, cultivation of, at Grignon (DEHÉRAIN), A., ii, 680.
 manurial experiments on (GORDON), A., ii, 238; (SJOLEMA), A., ii, 304, 305.
 influence of water and manures on the activity and development of (WILMS), A., ii, 164.
 influence of Stassfurt salts on the composition and yield of (SJOLEMA), A., ii, 305; (PFEIFFER), A., ii, 751.
Rye, chemical alteration of, on becoming mouldy (SCHERFE), A., ii, 429.
Rye straw, weak, composition of (MURRAY), A., ii, 498.
Sainfoin, cultivation of, at Grignon (DEHÉRAIN), A., ii, 681.
Saw palmetto (*Sabal serrulatum*), fruit of (SHERMAN and BRIGGS), A., ii, 102.

AGRICULTURAL CHEMISTRY: PLANTS:—

Spruce fir, relation of ash to the height of a (MILLS, IMRIE, and GRAY), A., ii, 496.

Sugar-cane, experiments on, in Hawaii (MAXWELL), A., ii, 304.

Tobacco plants (BEHRENS), A., ii, 239. manurial experiments on (JENKINS), A., ii, 239.

Tomatoes, use of fertilisers for (JENKINS and BRITTON), A., ii, 365.

Vine, effects of chlorosis in the (CURTEL), A., ii, 428. oxidising enzyme in the (CORNU), A., ii, 102.

Wheat, cultivation of, at Grignon (DEHÉRAIN), A., ii, 303. chemical alteration of, on becoming mouldy (SCHEPPE), A., ii, 429.

Wheat germ, oil from (FRANKFORTER and HARDING), A., ii, 37. nucleic acid and proteids of the (OSBORNE and CAMPBELL), A., i, 573.

Flour, gluten constituents of (GUESS), A., ii, 584.

SOILS.

Agricultural land of the Essex coast, injury to, by inundation of sea-water in 1897 (DYMOND and HUGHES), A., ii, 307.

Soil, distribution and importance of fufuroids in (STOKLASA), A., ii, 40.

composition of, under manure heaps, at different depths (EMMERLING and WEHNERT), A., ii, 505.

denitrification and decomposition of animal matters in (ROGÓYSKI), A., ii, 360.

chemically analysed, manuring experiments on (BAESSLER), A., ii, 240.

practical conclusions from the results of (DOERSTLING), A., ii, 752.

testing of, for application of fertilisers (WEBER), A., ii, 165.

methods of ascertaining the lime requirement of (WHEELER, HARTWELL, and SARGENT), A., ii, 432. effect of nitrogen, gypsum, and lime on (WHEELER, SARGENT, and HARTWELL), A., ii, 104.

behaviour of water-soluble phosphoric acid in (ULLMANN and GRIMM), A., ii, 431.

inoculation of, with nitrugin (FRANK), A., ii, 298; (NOBBE and HILFNER), A., ii, 299.

alluvial, of Lodi, composition of the (FASCETTI and GHIGI), A., ii, 615.

AGRICULTURAL CHEMISTRY: SOILS:—

Soil, arable, effect of carbon disulphide on the fertility of (WOLLNY), A., ii, 504.

amount of phosphoric acid necessary for (PAGNOLI), A., ii, 164.

meadow, action of manures on (MAERCKER), A., ii, 42; (NESSLER), A., ii, 162; (MALDEN), A., ii, 240; (BRIGHETTI), A., ii, 303; (LAWES and GILBERT), A., ii, 499; (ZECCHINI and NUOLI), A., ii, 505.

peat, composition of various kinds of (TACKE and TOLLENS), A., ii, 682.

manuring experiments on (TACKE), A., ii, 42.

action of animal manure on (HELLSTRÖM), A., ii, 616.

vegetation experiments with (IMMENDORFF and TACKE), A., ii, 615.

composition of drainage from manured and unmanured (TACKE, IMMENDORFF, and MINNSEN), A., ii, 683.

peat and sandy, impoverishment of, by removing turf and heather (IMMENDORFF), A., ii, 104.

sandy, action of burnt lime and marl on (TACKE, IMMENDORFF, SALFELD, and WOLFF), A., ii, 616.

of the Canton Redon, composition of (LECHARTIER), A., ii, 432, 433.

“alkali,” in Montana (TRAPHAGEN and COBLEIGH), A., ii, 40.

Siberian arable, composition of (SEMPOLOWSKI), A., ii, 433.

of the Tokay wine district (v. BITTÓ), A., ii, 751.

methods of analysis. See Main Index.

NITRIFICATION, NITROGEN, and NITROGENOUS COMPOUNDS:—

Nitrification, recent researches on (WARINGTON), P., 1900, 65.

in the soil of forests (MIGULA), A., ii, 744.

of organic nitrogen (OMELIANSKY), A., ii, 97.

Nitrates, action of Bacteria on (GRIMBERT), A., ii, 97; (SEWERIN), A., ii, 232.

Nitrogen in soil, importance of various plants used for manuring in increasing the amount of (LARSEN), A., ii, 505.

atmospheric, assimilation of, by alinit Bacteria (STOKLASA), A., ii, 96.

AGRICULTURAL CHEMISTRY: SOILS:—

Alinit bacillus (KOLKOWITZ), A., ii, 233.

Nitric organism from soil (STUTZER and HARTLEB), A., ii, 97.

Nitrifying organism, biology of a (BEYERINCK), A., ii, 425.

Nitrifying organisms, permanent forms of (BEDDIES), A., ii, 34.

influence of organic substances on (WINOGRADSKY and OMELIANSKY), A., ii, 96.

magnesia-gypsum as a solid medium for the cultivation of (OMELIANSKY), A., ii, 232.

Denitrification and fermentation (WOLFF), A., ii, 298.

and decomposition of animal matters in soil (ROGÓYSKI), A., ii, 360.

Denitrifying organisms (GRIMBERT), A., ii, 97; (WOLFF), A., ii, 98;

(SEWERIN), A., ii, 232.

morphology and biology of (JENSEN), A., ii, 495.

food of (STUTZER and HARTLEB), A., ii, 97, 359; (JENSEN), A., ii, 232;

(STUTZER and JENSEN), A., ii, 494.

nutritive value of carbohydrates for (STOKLASA), A., ii, 98.

WATER.

Rain-water collected at Cirencester, amount of chlorine in (KINCH), T., 1271; P., 1900, 183.

MANURES AND MANURING EXPERIMENTS.

Manures, conservation of (SCHNEIDEWIND), A., ii, 105.

distribution of (BERTHAULT), A., ii, 753.

nitrogen value of (JOHNSON, JENKINS, and BRITTON), A., ii, 42.

denitrification and decomposition of (ROGÓYSKI), A., ii, 360.

effect of, on the inner processes of plants (MÜLLER-THURGAU), A., ii, 506.

animal, action of, on peat soil (HELLSTRÖM), A., ii, 616.

artificial, changes in the weight of, when exposed to air (v. WISELL), A., ii, 683.

use of, for forcing house-crops (JENKINS and BRITTON), A., ii, 365; (OTTO), A., ii, 753.

green, composition of, grown on peaty and sandy soils (IMMENDORFF), A., ii, 164.

methods of analysis. See Main Index.

Alinit, behaviour of (KRÜGER and SCHNEIDEWIND), A., ii, 164.

manurial effect of (CAMPBELL; v. FEILITZEN), A., ii, 433; (TACKE), A., ii, 434.

AGRICULTURAL CHEMISTRY: MANURES:—

Alinit, use of, in the cultivation of cereals (MALPEAUX), A., ii, 498.

Ammonium sulphate as a manure (KLÖPPER), A., ii, 616.

Bone-meal, influence of Bacteria on the decomposition of (STOKLASA, DUCHÁČEK, and PITRA), A., ii, 684.

Farmyard manure, methods of experiments on the preservation of (PFEIFFER, MOSZEIK, and LEMMERMANN), A., ii, 753.

composition of the gas confined in (DEHERAIN and DUPONT), A., ii, 617.

Fertiliser-nitrogen, availability of (JOHNSON, JENKINS and BRITTON), A., ii, 42, 506.

Guano, bat, from Cagliari, Sardinia (PARIS), A., ii, 106.

fish, experiments with (BAESSLER), A., ii, 308.

Kraal manure, composition of (LEWIS), A., ii, 507.

Lime and magnesia in burnt lime and marls, experiments with (ULBRICHT), A., ii, 240.

Burnt lime, action of, on sandy soil (TACKE, IMMENDORFF, SALFELD, and WOLFF), A., ii, 616.

Manure-soils from Bohemia composition of (KOURINSKY), A., ii, 752.

Marl, action of, on sandy soil (TACKE, IMMENDORFF, SALFELD, and WOLFF), A., ii, 616.

Nitragin, experiments with (FRANK), A., ii, 298; (NOBBE and HILTNER), A., ii, 299; (CAMPBELL), A., ii, 433; (ADLER), A., ii, 501; (DICKSON and MALPEAUX; SCHRIEBAUX), A., ii, 505; (STOKLASA; DAWSON), A., ii, 610.

Phosphates, infection of, and its prevention (BORNTRÄGER), A., ii, 684.

experiments with (SCHREIBER; WAGNER), A., ii, 506, 507.

Tricalcium phosphate, solubility of, in natural waters in presence of carbonic acid (SCHLIESING), A., ii, 541, 618.

Phosphatic manures, value of lime in (BÖTTCHER), A., ii, 106.

Phosphoric acid, water-soluble, behaviour of, in soils (ULLMANN and GRIMM), A., ii, 431.

of basic slag and phosphates, solubility of, in peat soils, dependent on the amount of free humic acid in the soil (MINSEN and TACKE), A., ii, 618.

AGRICULTURAL CHEMISTRY: MANURES:

- Phosphoric acid**, methods of analysis.
See Main Index.
- Phosphorite**, manuring experiments with (SEMPOLOWSKI), A., ii, 43.
- Potash-lime manure**, experiments with (BAESSLER), A., ii, 308.
- Poultry manure**, importance of (ULRICH), A., ii, 308.
- Slag, basic**, experiments with (SEMPOLOWSKI), A., ii, 43; (SCHREIBER; WAGNER), A., ii, 506, 507.
methods of analysis. See Main Index.
- Sodium nitrate** as a manure (KLÖPFER), A., ii, 616.
perchlorate in, injurious effect of, on the growth of sugar-beet (STOKLASA), A., ii, 305.
- Sheep dung deposits**, composition of (LEWIS), A., ii, 507.
- Stable manure**, loss of nitrogen in (MAERCKER and SCHNEIDEWIND), A., ii, 105.
storage of (HOLDEFLEISS), A., ii, 571.
- Street-dust** as manure (CASALI), A., ii, 754.
- Superphosphate** and basic slag, experiments with (BAESSLER), A., ii, 307.
reversion of soluble phosphoric acid in (SCHUCHT), A., ii, 44.
bone- and mineral-, comparison between (MENOZZI), A., ii, 43.
methods of analysis. See Main Index.
- Manuring experiments** on the Schultz-Lupitz system (BAESSLER), A., ii, 504.
with green and dead plants and parts of plants (WOLLNY), A., ii, 683.
- Air**. See Atmospheric air.
- Albaspidin** (HAUSMANN), A., i, 49.
- Albite** from Virginia (VIOLA), A., ii, 663.
- Albumen** of the seed of the American bean (*Gleditsia triacanthos*), composition of the (GORET), A., ii, 562.
of St. Ignatius bean and Nux vomica, composition of the (BOURQUELOT and LAURENT), A., ii, 498, 611.
- Albumin**, formation and decomposition of, in plants (SCHULZE), A., ii, 612.
in the cell of the queen bee (SÜSS; KLETT), A., ii, 93.
in ox-serum (HOUGARDY), A., i, 709.
in normal urine (BELLOCQ), A., ii, 556.
Bence-Jones, occurrence of, in urine (MAGNUS-LEVY), A., i, 615.
- Albumin**, action of heat, dilute acids and alcohol on (PANORMOFF), A., i, 127.
formation of bases from (COHN), A., i, 466.
digestion of, by papain (HARLAY), A., i, 419.
detection of, in urine (MANKIEWICZ), A., ii, 459; (JOLLES), A., ii, 516.
error in estimating, in urine (DEROIDE and OUI), A., ii, 123.
- Albumin, egg-**, preparation of a pure (HOPKINS), A., i, 466.
crystalline, oxidation of, by hydrogen peroxide (SCHULZ), A., i, 266.
effect of desiccation on the coagulability of (FARMER), A., i, 572.
- Albumins, egg-**, nomenclature of (PANORMOFF), A., i, 126.
- Albuminuria**, origin of the proteids in (CLOËTTA), A., ii, 155.
- Albumin, action** of heat, dilute acids, and alcohol on (PANORMOFF), A., i, 571.
- Albuminoid**. See Proteid.
- Albumoses**, formation of (BOKORNY), A., i, 126.
amount of nitrogen from (FRIEDMANN), A., i, 265.
influence of, on urinary secretion (THOMPSON), A., ii, 226.
detection of, in urine (v. ALDOR), A., ii, 123.
- Alkali-albumose**, from the action of alkali on proteid (MAAS), A., i, 709.
- Hetero-albumose** from fibrin, nutritive value of (BLUM), A., ii, 667.
- Proto-albumose** from casein, nutritive value of (BLUM), A., ii, 667.
- Hetero- and Proto-albumoses**, composition of (PICK), A., i, 68.
- Alcohol**. See Ethyl alcohol.
- Alcohol** (b. p. 83-84°), from the hydrocarbon from *isofenchyl* alcohol (BERTRAM and HELLE), A., i, 399.
pentahydric, from methylallylcarbinol, and its acetyl derivatives (MAXIMOVITSCH), A., i, 325.
 $C_5H_{10}O$, from isoprene bromide (MOKIEWSKY), A., i, 509.
- Alcoholism**, acute, estimation of alcohol in blood and tissues in (GRÉHANT), A., ii, 95, 112.
- Alcohols**, synthesis of (GRIGNARD), A., i, 382.
magnetic behaviour of (HEINRICH), A., ii, 707.
acidity of (DE FORCRAND), A., ii, 527.
reaction of, with alkyl nitrites, in presence of excess of alcoholic hydrogen chloride (KISSEL), A., i, 620.

Alcohols, action of aluminium amalgam on (TITSCHENKO), A., i, 269.
determination of the toxicity of (VANDEVELDE), A., ii, 302.
detection of aldehydes in (ISTRATI), A., ii, 117.
detection of methyl alcohol in (WOLFF), A., ii, 111.
estimation of, in brandy (ADAM), A., ii, 53.

Alcohols and Phenols. See also :—
p-Acetoxy- ψ -cumyl alcohol.
p-Acetylaminobenzoylcarbinol.
7-Acetyl-amino-2-naphthol.
Acetylcarbinol.
Alcornol.
Allyl alcohol.
Amyl alcohol.
Amyrol.
Anhydro-*p*-acetylaminobenzyl alcohol.
Anhydro-*p*-formylaminobenzyl alcohol.
p-Anhydromethylaminobenzyl alcohol.
Anthragallol.
Apigenin.
Aspidinol.
Benzeneazo-*o*-dibromophenol.
Benzeneazo- β -naphthol.
Benzeneazophenol.
Benzenyl-*o*-aminophenol.
Benzoylbenzhydryl.
Benzoylcarbinol.
Benzyl alcohol.
Benzylcarbinol.
Benzylidimethylcarbinol.
Benzylidimethylolquinaldine.
Benzylidenebisdihydroresorcinol.
Benzylidenebisdimethyldihydroresorcinol.
Benzylidenebisdiphenyldihydroresorcinol.
Benzylmethylolquinaldine.
Borneols.
p-sec. Butylphenol.
Carvacrol.
Carvomenthol.
Catechol.
Cholesterol.
Citronellol.
Coprosterol.
Cresols.
 ψ -Cumenol.
Cumylidenebisdimethyldihydroresorcinol.
Diacetyl-amino- β -naphthol.
Diethyl-*d*-aminoeresol.
Dihydrocarveol.
Dihydrocuminyl alcohol.
Dihydroencarveol.
Dihydroresorcinol.
Dihydroxyerackene.
Dihydroxydimethylpropanes.
2 : 5-Dihydroxydiphenyl.

Alcohols and Phenols. See :—
Dihydroxyflavones.
Dihydroxynaphthalenes.
Dihydroxynaphthaquinone.
Dihydroxy-*o*-xylene.
Dihydroxyxyloquinone.
Dimethylallylcarbinol.
o-Dimethylanthranol.
Dimethylol-5-methylacridine.
Dimethyl-1:2:3:5-phenetetrol.
Dimethylphloroglucinol.
Dimethylpropan-1:3-diols.
2:6-Diphenylphenol.
Diphenylquinol.
Dulcitol.
Erythritols.
Ethyl alcohol.
Ethylene glycol.
Ethylphloroglucinol.
Fenchyl alcohols.
o-Formylaminophenol.
 γ -Furfuryl- $\beta\beta$ -dimethylpropylene glycol.
Geraniol.
Glycerol.
Guaiacol.
Hydroxybenzyl alcohols.
Hydroxy- ψ -cumyl alcohols.
p-Hydroxy- ψ -cumylene *o*-glycol.
8-Hydroxy-5 : 7-dimethylfluorone.
2-Hydroxydiphenyl.
Hydroxydiphenylbenzene.
5-Hydroxyhydrindene.
4-Hydroxymesityl alcohol.
3-Hydroxy-5-methoxy-2-methylphenol.
3-Hydroxy-5-methoxy-2-methyl-*p*-quinol.
7-Hydroxy-2-methylchromone.
2-Hydroxy-3-methyldiphenyl.
8-Hydroxymethylfluorone.
Hydroxynaphthaquinones.
Hydroxyphenanthrenes.
Hydroxyphenylcoumalin.
Hydroxystyrogallol.
Hydroxyxylylene glycols.
Iditols.
Inositol.
Iretol.
Lariciresinols.
d-Mannitol.
Menthol.
Menthomenthol.
Mesityl.
o-Methoxybenzyl alcohol.
o-Methoxyphenyl-*di*- and -*tri*-chloromethylcarbinols.
Methylacetalylquinol.
Methylacetalylresorcinol.
Methylacetylcarbinol.
Methyl alcohol.
Methyl-*o*-aminophenol.

Alcohols and Phenols. See:—

Methyldiallylcarbinol.
 Methylenebisdihydroresorcinol.
 Methylenebisdimethyldihydroresorcinol.
 Methylenebisdiphenyldihydroresorcinol.
 Methylenebismethyldihydroresorcinol.
 Methylenebisphenyldihydroresorcinol.
*iso*Methyleugenol. •
 Methylcyclohexanols.
 Methyl octadienol.
 o-Methylolbenzoic hydrazide.
 Methyloldeoxycinchonine.
 Methyloldoxycinchonine.
 Methylol-5-ethylacridine.
 Methylol-5-methylacridine.
 2-Methyl-1:3:4:5-phentetrol.
 Methylphloroglucinol.
 Morphenol.
 Morphol.
 α-Naphthaquinone-3-dihydroresorcinol.
 Naphthols.
 Orcinol.
 Oxymesitol.
 Oxyxlenol.
 Pentaglycols.
 Pentamethylbenzhydrol.
 Phenol.
 Phenolazobenzeneazophenol.
 Phenols.
 Phentetrol.
 Phenylisobutylcarbinol.
 Phenyl dimethylcarbinol.
 Phenyl-3:3-dimethyl-2-indolinol.
 Phenylethyl alcohol.
 Phenylmethylacridol.
 2-Phenylphenol.
 Phloroglucinol.
 Phytosterol.
 Picric acid.
 Pinenol.
 Propionylcarbinol.
 Propylcatechol.
 Propylene glycol.
 Quinol.
 Quinolinephenol.
 Resorcinol.
 Rhodinol.
 Sabinene glycol.
 Sabinol.
 Sabinylglycerol.
 Santalols.
 Sorbitols.
 Sphagnol.
 Styryltrichloromethylcarbinol.
 Tanacetyl alcohol.
 Tetrahydroxyanthraquinone.
 Tetrahydroxytoluene.
 Tetramethyldiaminobenzhydrol.
 Tetramethyldiaminophenylcarbinol.

Alcohols and Phenols. See:—

Tetramethyldiaminophenylmethylcarbinol.
 Thebaols.
 Thujol.
 Thymol.
 Toluquinol.
 2:3:6-Trihydroxyanthracoumarin.
 1:2:3-Trihydroxyanthraquinone.
 Trihydroxyflavones.
 1:2:4-Trihydroxynaphthalene.
 Trihydroxynaphthaquinones.
 Trihydroxytoluene.
 Trimethyldihydroresorcinol.
 Trimethyldihydroxybenzenes.
 Trimethylphloroglucinol.
 Trisdihydroxybenzoylenebenzene.
 Xylenols.
Alcornol, $C_{22}H_{34}O$, from alcornoco barks (HARTWICH and DÜNNENBERGER), A., ii, 747.
Aldazines, preparation of (CURTIUS and LUBLIN), A., i, 700; (CURTIUS), A., i, 701.
 reduction of (CURTIUS), A., i, 610.
Aldehydase from the liver and suprarenal capsule (JACOBY), A., i, 711.
Aldehyde. See Acetaldehyde.
Aldehyde, $C_{10}H_{12}O_2$, from the oxidation of anethole (BOUGAULT), A., i, 495.
Aldehyde group, $R \cdot CH \cdot$, replacement of, by benzoyl, in hydrazine derivatives (MINUNNI and CARTA-SATTA), A., i, 251.
Aldehyde-musk, its oximes and diacetyl derivative (BAUR-THURGAU and BISCHLER), A., i, 178.
Aldehydes, condensation of, with secondary bases and dithio-oxamide (WALLACH), A., i, 210.
 condensation of, with chrysean (HELLSING), A., i, 518.
 compounds of, with isocyanides (WADE), P., 1900, 157.
 compounds of, with dihydroresorcinol (VORLÄNDER and KALKOW), A., i, 99; (VORLÄNDER and STRAUSS), A., i, 100.
 action of, on phenylacetic acid, and on phenylactonitrile and its derivatives (v. WALTHER and WETZLICH), A., i, 438.
 action of, on quinoline derivatives containing a methyl or methylene group in 2 or 4 positions (KOENIGS), A., i, 189.
 detection of (LEWIN), A., ii, 179.
 detection of, in alcohols (ISTRATI), A., ii, 117.
 estimation of, by means of hydrazines (HANUS), A., ii, 773.

Aldehydes, aromatic, preparation of, from the corresponding acids by means of hydrazines (CURTIUS), A., i, 701.

condensation of, with azodicarbamide (YOUNG and WITHAM), T., 224; P., 1900, 5.

compounds of, with secondary hydrazines (LABHARDT and V. ZEMBRUSKI), A., i, 125.

action of, on derivatives of β -naphthylamine (MORGAN), T., 1210; P., 1900, 171.

double compounds of, with orthophosphoric acid (RAIKOW), A., i, 602.

reaction between sodium borneols and (HALLER), A., i, 301.

Aldehydes, polymeric, action of bromine on (FRANKE), A., i, 427.

Aldehydes. See also:—

Acetaldehyde.

Acraldehyde.

Aldehyde-musk.

Aldols.

Anisaldehyde.

Benzaldehyde.

Benzeneazosalicylaldehyde.

Bromal.

*iso*Butaldehyde.

Butylxylylaldehyde.

Camphenilanaldehyde.

Carvacrylaldehyde.

Chloral.

Citral.

Citronellal.

Formaldehyde.

Furfuraldehyde.

Glycollic aldehyde.

Glyoxal.

p-Hydroxybenzaldehyde.

2-Hydroxy-4:5-dimethylbenzaldehyde.

o-Hydroxymandelic aldehyde.

p-Hydroxymesitylenealdehyde.

p-Hydroxyphthalaldehyde.

Hydroxy-*o*-tolualdehydes.

Malonic acid, semi-aldehyde of.

Methoxyhydratropic aldehyde.

Methylfurfuraldehyde.

Nonaldehyde.

Paraformaldehyde.

α -Phenoxypropaldehyde.

Propaldehyde and Parapropaldehyde.

p-*iso*Propylphenoxyacetaldehyde.

Pyrrole-2-aldehyde.

4-Quinolinealdehyde.

Rhodinal.

Salicylaldehyde.

Santalal.

Terephthalaldehyde.

Triacetaldehydes.

Tolyloxypropaldehyde.

Aldehydes. See:—

Valeraldehyde.

Vanillin.

Xylenoxyaldehyde.

o-**Aldehydic acids**, condensation products of, with ketones, properties of (FULDA), A., i, 36.

Aldehydo-*o*-aminobenzoic acid, phenylhydrazone and semicarbazone of (ELLIOTT), T., 214; P., 1899, 243.

p-**Aldehydobenzamide** (MOSES), A., i, 659.

Aldehydophenoxyacetic acid, bromo- and chloro- (STOERMER), A., i, 654.

Aldol from *isobutaldehyde* and formaldehyde, and its triacetyl derivative (WESSELY), A., i, 428.

OH·CHMe·CHMe·CHO, from the condensation of acetaldehyde and propaldehyde (SCHMALZHOFFER), A., i, 626.

Aldols, molecular weight of the (KOHN), A., i, 274.

Alga, green, pure culture of a (RADAIS), A., ii, 362.

Algæ, marine, composition of (CUNIASSE), A., ii, 680.

Alinit. See Agricultural Chemistry.

Alizarin-green-B as an indicator (FORMANEK), A., ii, 435.

Alkali, estimation of free, in soaps (DIVINE), A., ii, 759.

Alkali carbonates, estimation of, in presence of alkali hydrogen carbonates (CAMERON), A., ii, 575.

percarbonates and persulphates, iodometric estimation of (RUPP), A., ii, 572.

chlorides, electrolysis of solutions of (FOERSTER), A., ii, 72, 400; (MÜLLER), A., ii, 73; (BROCHET), A., ii, 205, 276, 541; (WOHLWILL), A., ii, 400, 471; (SIEVERTS), A., ii, 470; (LORENZ and WEHRLIN), A., ii, 476.

electrolysis of solutions of, with a diaphragm (FOERSTER and JORRE), A., ii, 343.

electrolysis of solutions of, evolution of oxygen at the anode in the (FOERSTER and SONNEBORN), A., ii, 645.

hydroxides, heat of formation of (DE FORCRAND), A., ii, 476.

action of, on nitrogen iodide (CHATTAWAY and ORTON), A., ii, 722.

iodides, action of oxidising agents on (PÉCHARD), A., ii, 536.

metals, preparation of alloys of (LEBEAU), A., ii, 276.

nitrites, colour of (DIVERS), P., 1900, 40.

persulphates, estimation of (GRÜTZNER), A., ii, 310.

Alkali-albumose. See Albumose.

Alkalimetry (ASTRUC), A., ii, 572.

of the amines (ASTRUC), A., i, 141.

perezone as an indicator in (DUYK), A., ii, 308.

Alkaline earth carbonates, solubility of, in water containing carbon dioxide (BODLANDER), A., ii, 715.

metals, electrolysis of the bromides of (SARGHEL), A., ii, 400.

metals, toxic action of compounds of the, towards the higher plants (COUPIN), A., ii, 363; (SUZUKI), A., ii, 561.

Alkalies, action of iodine on (TAYLOR), T., 725; P., 1900, 70.

Alkali-syenite (*umpteekite*) from Massachusetts (WRIGHT), A., ii, 663.

Alkaloid, C_9H_7ON , from pomegranate root (PICCININI), A., i, 110.

from the balsam of *Abies canadensis* (TSCHIRCH and BRÜNING), A., i, 679.

from the balsam of *Abies pectinata* (TSCHIRCH and WEIGEL), A., i, 680.

from *Agaricus phalloides* (ROBERT), A., ii, 156.

from the balsam of *Larix decidua* (TSCHIRCH and WEIGEL), A., i, 680.

Alkaloids of Japanese aconite and of *Aconitum Napellus*, comparison of properties of (DUNSTAN and READ), T., 63.

of *Bocconia cordata* (MURRILL and SCHLOTTERBECK), A., i, 686.

poisonous, of the Boraginæ (GREIMER), A., i, 683.

of *Ceanothus americanus* (GORDIN), A., i, 683.

distribution of, in the Compositæ (GRESHOFF), A., i, 556.

of the leaves of *Datura Stramonium*, *Hyoscyamus niger*, and *Atropa Belladonna*, estimation of (SCHMIDT), A., ii, 379.

of jaborandi leaves (JOWETT), T., 473; P., 1900, 49.

from the seeds of blue and perennial lupins (CALLSEN), A., i, 186.

percentage of, from various lupins (SEMPOLOWSKI), A., ii, 103.

amount of, in the bark of Java pomegranates, and titration of (BECKERTS), A., ii, 563.

from the salamander (FAUST), A., i, 186.

of the Solanaceæ (HESSE), A., i, 50; (GADAMER), A., i, 356.

alkylated, relationship between the chemical constitution and physiological action of (ROSENSTEIN), A., ii, 294.

Alkaloids, action of formaldehyde on (KOENIGS), A., i, 190.

combination of, with nucleins (STASANO), A., ii, 559.

action of chloroform or ether on salts of (HILL; SCHAEER), A., ii, 455.

alkylthiosulphonates of (TROEGER and LINDE), A., i, 515.

use of chloral hydrate in the estimation of (SCHAEER), A., ii, 57.

alkalimetric method for the estimation of (GORDIN), A., ii, 777.

estimation of, volumetrically (LINDE), A., ii, 583.

estimation of, by iodine solution (KIPPENBERGER), A., ii, 583; (SCHOLTZ), A., ii, 638.

salt forming, estimation of (GORDIN), A., ii, 119.

vegetable, estimation of, volumetrically, by titration with acids (KIPPENBERGER), A., ii, 637.

Alkaloids. See also Ptomaine.

Alkaloids. See also :—

Aconitine.

Anagyrene.

Arginine.

Atropine.

Atroscine.

Berberine.

Butyleytisine.

Caffeine.

Carnosine.

Carpaine.

Cetyleytisine.

Cheirinine.

Chelerythrine.

Choline.

apo-Cinchonine.

Cinchonicine.

Cinchonine.

Cocaine.

Codeine.

Coniine.

Consolicine.

Cornutine.

Cotarnine.

ψ-Cotarnine.

Creatine.

Creatinine.

Cynoglossine.

Cytisine.

Damascenine.

Deoxycaffeine.

Deoxymorphine.

Deoxytheobromine.

Dihydrocinchenine.

Ecgonines.

Echinopsine.

Epinephrine.

Ethyleytisine.

Guanine.

Alkaloids. See:—

Histidine.
 β -Homochelidonine.
 Homoapocinchénine.
 Hydroxyapocinchénine.
 Hyosciné.
 Hyoscyaminé.
 Jaboriné.
 Japaconine.
 Japaconitine.
 Japbenzaconine.
 Ketoapocinchénine.
 Ketohomoapocinchénine.
 Laudanosine.
 Lysine.
 Macleyine (*protopine*).
*iso*Meroquinénine.
 Methylcytisine.
 Methyljapaconitine.
 Methylmorphiméthine.
 Methylphenomorpholine.
 Methylisopilocarpine.
 Morphine and *iso*Morphine.
 Narceine.
 Narcotine.
 Nicotine.
 Nortropidine.
 Oxycotariné.
 Paraxanthine.
 Pilocarpidine.
 Pilocarpine and *iso*Pilocarpine.
 Protopine.
 Protoveratrine.
 Pyrojapaconine.
 Pyrojapaconitine.
 Ricinine.
 Samadaridine.
 Samadarine.
 Scopolamine.
 Solanine.
 Sphingosine.
 Strychnine.
 Suprarenine.
 Symphytocynoglossine.
 Theobromine.
 Tropine and ψ -Tropine.
 Veratrine.
 Xanthine.
Alkaramel, (SCHWEITZER), A., i, 277.
Alkyl bromides, velocity of combination of secondary amines with (MENSCHUTKIN), A., i, 335, 341.
 haloids, nitrates, and sulphates, dissociation of (NEF), A., i, 4, 349.
 iodides and dry silver oxide, alkylation by means of (LANDER), T., 736; P., 1900, 6, 90.
 action of, on acylthioncarbamie esters (WHEELER and JOHNSON), A., i, 632.

Alkyl iodides, action of, on mercuric iodide-sulphides of the fatty series (SMILES), T., 160; P., 1899, 240.
 compounds of, with *isocyanides* (WADE), P., 1900, 157.
 nitrates, decomposition of, by alkalis (BERTHELOT), A., i, 620.
 nitrites, reaction of, with alcohols and ketones in presence of excess of alcoholic hydrogen chloride (KISSEL), A., i, 620.
 action of zinc alkyls on (BEWAD), A., i, 629.
 phosphates (CAVALIER), A., i, 75; (CAVALIER and PROSR), A., i, 579.
Alkylation by means of dimethyl sulphate (ULLMANN and WENNER), A., i, 619.
 by means of dry silver oxide and alkyl haloids (LANDER), T., 729; P., 1900, 6, 90.
 of ketones (NEF), A., i, 349.
Alkyldicarboxylic acids, method of identifying, and their amic acids and imides (AUWERS, MAYER, and SCHLEICHER), A., i, 84.
Alkylloxides, additive compounds of, with nitro-compounds (HANTZSCH and KISSEL), A., i, 89; (JACKSON and GAZZOLO), A., i, 433; (ANGELI), A., i, 553.
 aluminium (TISTSCHENKO), A., i, 269.
 sodium, action of, on ethyl phthalyl-aminoacetate and its homologues (GABRIEL and COLMAN), A., i, 358.
 β -**Alkyl-oxy-a-cyanocrotonic acids**, ethyl esters of, isomeric with ethyl cyano-alkylacetates, preparation of (HALLER), A., i, 372.
 β -**Alkyl-oxy- β -phenyl-** and **- β -benzyl-acrylic acids**, α -cyano-, alkylesters and action of ammonia on (HALLER and BLANC), A., i, 496.
Alkylquinoline salts, nitration of (DECKER), A., i, 689.
Alkylurethanes, nitroso- (HANTZSCH), A., i, 86; (BRÜHL), A., i, 210.
Allantoin, estimation of, in urine (LOEWI; PODUSCHKA), A., ii, 636.
Allenemercury salts (SAND and HOFMANN), A., i, 386; (HOFMANN and SAND), A., i, 618.
Allophane from Italy (D'ACHARDI), A., ii, 218.
Alloxuric substances in the urine in nephritis (MARTIN), A., ii, 155.
Alloys, heat of formation of (TAYLER; GLADSTONE), A., ii, 710.
 specific heat of, at low temperatures (BEHN), A., ii, 259.

- Alloys**, thermo-electrical properties of (STEINMANN), A., ii, 523, 524.
 application of the phase rule to (LE CHATELIER), A., ii, 197.
 metallic, direct combustion of (BREARLEY), A., ii, 440.
 separation in (NANNES), A., ii, 531.
 estimation of arsenic in (HOLLARD and BERTIAUX), A., ii, 438.
- Allyl alcohol**, hydrogenation of (SPERANSKI), A., i, 3.
 action of, on mercuric salts (SAND and HOFMANN), A., i, 386; (BILLMANN), A., i, 431; (HOFMANN and SAND), A., i, 618.
 action of potassium platinochloride on (BILLMANN), A., i, 543.
 preparation of acrylic acid from (BILLMANN), A., i, 425.
- Allylacetone** and its oxime, semicarbazone and dibromide (v. BRAUN and STECHELE), A., i, 429.
- Allylene**, action of hypochlorous and hypobromous acids on (WITTORF), A., i, 421.
- Allylmaleonic acids**, substituted, ethyl esters of, action of nitrosyl chloride on (IPATIEFF), A., i, 15.
- Allyloxide**, aluminium, preparation of (TISTSCHENKO), A., i, 270.
- Allyloxidemercuric salts** (BILLMANN), A., i, 431.
- Aloin reactions**, nature of Klunge's, and production of "aloin red" (SCHAER), A., i, 512; ii, 583.
- Aluminium**, some properties of (MATIGNON), A., ii, 482.
 transparency of, to radium radiations (BECQUEREL), A., ii, 381, 518.
 action of caustic hydroxides on (ALLEN and ROGERS), A., ii, 727.
- Aluminium compound** formed at the aluminium anode in the electrolysis of sulphuric acid (NORDEN), A., ii, 404; (MORGAN and DUFF), A., ii, 588.
- Aluminium alloys** with gold (HEYCOCK and NEVILLE), A., ii, 549.
 with mercury, action of, on alcohols (TISTSCHENKO), A., i, 269.
- Aluminiumarsenide**, phosphide, selenide, and sulphide, preparation of (FONZES-DIACON), A., ii, 405; (MATIGNON), A., ii, 482.
 bromide, bromination with, in the fatty series (POURET), A., i, 369.
 compounds of, with bromo-derivatives of ethane and carbon disulphide (KONOWALOFF and PLOTNIKOFF), A., i, 323.
 chloride, function of, in the Friedel-Crafts' reaction (PERRIER), A., i, 331; (BOESEKEN), A., i, 349.
- Aluminium chloride**, anhydrous, action of, on acetylene (BAUD), A., i, 369.
 action of, on camphoric anhydride (LEES and PERKIN), P., 1900, 18; (BLANC), A., i, 133, 586.
 additive compounds of, with benzoic chloride and benzophenone (KRONBERG), A., i, 502.
 fluoride, double salts with cobalt, copper, ferrous, nickel or zinc fluoride (WEINLAND and KÖPPEN), A., ii, 144.
 hydroxides (ALLEN), A., ii, 726.
 nitride, formation of, in the electric arc (ARONS), A., ii, 143.
 oxide (*alumina*), new hydrate of, (ZUNINO), A., ii, 348.
- Aluminium organic compounds**:—
- Aluminium alkyloxides** (TISTSCHENKO), A., i, 269.
- Aluminium, estimation of**:—
 estimation of (STOCK), A., ii, 247, 315; (ALLEN and GOTTSCHALK), A., ii, 762.
 estimation of, by solution in hydrochloric acid (BALDY), A., ii, 690.
 estimation of, in presence of calcium, iron, magnesium and manganese (HESS and CAMPBELL), A., ii, 50.
 estimation of, as phosphate in ore and blast-furnace cinder (CAMP), A., ii, 763.
 estimation of, in natural phosphates (VEITCH), A., ii, 577.
- Amalgams**. See Mercury alloys.
- Amanita muscaria*, green pigment of (GRIFFITHS), A., ii, 235.
- Amarine** and *iso*Amarine, constitution of (JAPP and MOIR), T., 608; P., 1899, 211, 227; 1900, 15.
- Amarine**, racemic and optically active forms of (SNAPE), T., 778; P., 1899, 228; 1900, 118.
- Ambrite**, from New Zealand coal (BEDSON), A., ii, 20.
- Amethyst**, colour of (NABL), A., ii, 661.
- Amides**, action of dry silver oxide and alkyl iodides on (LANDER), T., 736; P., 1900, 6, 90.
 formation of the sodium salts of (WHEELER), A., i, 492.
- Amines**, action of, on mesityl oxide and phorone (TRAUBE and LORENZ), A., i, 116.
- Amidosulphite**, formation and decomposition of (DIVERS and OGAWA), T., 327; P., 1900, 38.
- Amidosulphuric acid**, production of (DIVERS and HAGA), T., 978; P., 1900, 147.

- Amine nitrates**, dehydration of, to nitramines (*diazotic acids*) (BAMBERGER and HOFF), A., i, 435.
- Amines** in aqueous solutions, molecular dissociation of (HANTZSCH and SEBALDT), A., ii, 69.
- alkalimetry of the (ASTRUC), A., i, 141.
- oxidation of, by Caro's reagent (BAMBERGER and HILL), A., i, 281; (BAMBERGER), A., i, 500.
- action of, on acylthioncarbamate esters (WHEELER and JOHNSON), A., i, 632.
- action of, on hydroxamic acids (THIELE and PICKARD), A., i, 29.
- condensation of, with salol (COHN), A., i, 548.
- bromo-, action of silver oxide and of hydroxylamine on (KIJNER), A., i, 277, 333, 629.
- Amines**, aromatic, direct introduction of nitro-groups into the side chain of (BAMBERGER and HOFF), A., i, 435.
- action of cyanogen on (MEVES), A., i, 483.
- action of phosphoryl chloride, and of phosphorus thiochloride on, in presence of alkali (AUTENRIETH and RUDOLPH), A., i, 570.
- action of picryl chloride on (WEDEKIND), A., i, 216.
- primary aromatic, action of hypochlorous acid on (MEIGEN and NORMANN), A., i, 702.
- action of nitrous acid on (TÄUBER and WALDER), A., i, 566.
- tertiary aromatic (HAEUSSERMANN), A., i, 365.
- aromatic and fatty, compounds of, with tellurium tetrabromide and tetrachloride (LENHER), A., i, 379.
- fatty, action of Caro's reagent on (BAMBERGER and HILL), A., i, 281.
- action of hydrogen peroxide on (MAMLOCK and WOLFFENSTEIN), A., i, 209.
- action of sulphur dioxide on (SCHUMANN), A., ii, 272.
- detection of (RIMINI), A., ii, 56, 454.
- primary and secondary, acetylation of (MUSSELIUS), A., i, 334; (MENSCHUTKIN), A., i, 335, 341.
- secondary, new synthesis of (TINGLE), A., i, 641.
- velocity of combination of alkyl bromides with (MENSCHUTKIN), A., i, 335, 341.
- condensation of, with aldehydes and dithio-oxamide (WALLACH), A., i, 210.
- Amines**, tertiary, action of cyanogen bromide on (v. BRAUN), A., i, 430, 641, 687.
- action of hypochlorous acid on (WILLSTÄTTER and IGLAUER), A., i, 458.
- primary, secondary and tertiary, distinguishing (SOLONINA), A., i, 147; (MARCKWALD), A., i, 149, 336; (DUDEN), A., i, 282; (MENSCHUTKIN), A., i, 335.
- action of, on dibromotriacetoneamine (PAULY and BOEHM), A., i, 357.
- compounds of, with iminothiodiphenylimine (SCHAPOSCHNIKOFF), A., i, 523.
- Amines**. See also:—
- Acetylaniline.
 - Acetyl- ψ -cumidine.
 - Acetylguanidine.
 - Acetyltoluidines.
 - Acetyl- α -*m*-xylylidine.
 - Anhydrotriacetonediguanidine.
 - Aniline.
 - Anilindiphenylguanidine.
 - 7-Anilino-3:4-diphenyltriazole.
 - Anilino-4-methylpyrimidine, amino-.
 - 5-Anilino-4-phenyltriazole.
 - Anisidine.
 - Auramine.
 - Benzamidine.
 - Benzidine.
 - β -Benzylallylamine.
 - Benzylisoamylamine.
 - Benzylaniline.
 - Benzylbutylamines.
 - Benzylidiguanide.
 - α -Benzylhydroxylamine.
 - Benzylideneaminodiphenylguanidine.
 - Benzylideneaminoditolylguanidines.
 - Benzylideneaniline.
 - Benzylidene-2-naphthylamine.
 - Benzylideneneobornylamine.
 - Benzylphenylnitrosoamine.
 - Bornylamine.
 - β -Bornylhydroxylamine.
 - Butylxyldines.
 - p-n*-Butyrylaniline.
 - Butyryl-*o*-flavaniline.
 - 2-Camphanamine.
 - Camphenamine.
 - Campholene, α -amino-.
 - Carbanilinoamino-diphenyl- and -ditolyl-guanidines.
 - Catecholcarbonylbenzylisoamylamine.
 - Chitosamine (*glucosamine*).
 - Cinnamylidene-2-naphthylamine.
 - Cuminylidene-2-naphthylamine.
 - Diacetoneamine.
 - Diisoamylidibromoamine.
 - Dianiline.
 - Dianilinoquinoneanil.

Amines. See:—

Dibenzylamine.
s-Dibenzyl-*i*-diphenylethylenediamine.
 Dibenzyl- β -naphthylamine.
 Di-2:4-dimethylbenzylamine.
p-Diethylaminobenzyl-*p*-toluidine.
 2:2'-Dihydro-*diamino*-1:1'-dinaphthylmethane.
 Diethylaniline.
 Diethylenediamine.
 Diethylhydroxylamine.
 Diethylnaphthylamines.
 Diethyltetrahydronaphthylamine.
 Dihydroisolaureonamines.
 Dihydroxypyrimidine, amino-.
 Dimethylamine.
 Dimethylamine.
 Dimethylaminobenzyl-*p*-toluidine.
 4'-Dimethylaminodiphenylmethane, amino-.
 4-Dimethylaminophenylaminotolylmethanes.
 Dimethylaniline.
 Di-*p*-methylbenzylamine.
 Dimethylnaphthylamines.
 Dimethylphenonaphthacridine salts, amino-.
 2:6-Dimethylpyridine, 3:5-*diamino*-.
as-Dimethylthionine.
 Dimethylxylidines.
 α -Dinaphthylbenzidine.
 Dinaphthylphenylenediamines.
 Dioctylamine.
 2:5-Dioxy-4-methylpurine, 7-amino-.
 Diphenylamine, *triamino*-.
 Diphenylbutenylamidine.
 Diphenylethylenediamine.
 Diphenylguanidine, amino-.
 Diphenylmethane, *tetramino*-.
 Diphenylmethylenedihydroxylamine.
 Dipropylhydroxylamines.
 Ditolyethylenediamines.
 Ditolylguanidines, amino-.
 Di-*m*-tolylmethane, *triamino*-.
 Ditolylmethylenedihydroxylamine.
 Dixenylamine, *diamino*-.
 Di-*p*-xyl-*o*-methylenedihydroxylamine.
 Ethenyl-*triamino*naphthalene.
 Ethylamine.
 β -Ethyl-*sec*- and -*tert*-amylhydroxylamines.
 Ethylbenzene, amino-.
 β -Ethyl-*sec*. butylhydroxylamine.
 Ethyldichloroamine.
 Ethylcyanoaniline.
 Ethylenediamine.
 Ethylenetrimethylenediamine.
 β -Ethyl-*sec*. heptylhydroxylamine.
 Ethyl- β -naphthylamine.
 Ethylisopropylaniline.

Amines. See:—

β -Ethylpropylhydroxylamine.
o-Flavaniline.
 Flavinduline, 2:7-*diamino*-.
 Flavindulines, amino-.
 Furfurine.
 Galactosamine.
 Glucosamine (*chitosamine*).
 Guanidine.
 Heptylamines.
 β -*tert*. Heptylhydroxylamine.
 Hexamethylenetetramine.
 Hexethylidenetetramine.
 Hexylamines.
 Homodihydroisolaureonamine.
 Hydrindamine.
 Hydroxybenzylaniline.
 Hydroxybenzylideneaminodi-*p*-tolylguanidine.
 Hydroxybenzylideneaniline.
 Hydroxybenzylidene-2-naphthylamine.
o-Hydroxybenzyl-*p*-tolylnitrosoamine.
 2-Hydroxydiphenyl, 5-amino-.
 2-Hydroxy-1:3-diphenylbenzene, 5-amino-.
 Hydroxylamine.
 1-Hydroxylaminocamphane.
p-Hydroxymesitylaniline.
 Hydroxypyrimidine, amino-.
 Menthylamines.
 Mesidine.
p-Methoxybenzylidene-2-naphthylamine.
 3-*p*-Methoxyphenylquinoline, 2-amino-.
 Methylallylaniline.
 Methylamine.
 Methylaniline.
 Methyl-*o*-anisidine.
 Methylcyanoaniline.
 Methylenebis-2-naphthylamine.
 Methylene-glutamine.
 Methylene-phenonaphthacridine, amino-.
 2-Methyl- α -naphthimidazole, amino-.
 Methylnitramine.
 Methylphenonaphthacridine, amino-.
m-Methylphenylethylamine.
 Methylisopropylaniline.
 4-Methylpyrimidine, amino-.
 Naphthaphenazine, 9-amino-.
 Naphthylamine.
 Naphthylene-*o*-diamines.
 Naphthylnitrosoamine.
 Naphthylphenylenediamine.
 Neobornylamine.
 β -Octylamine.
 Phenothiazine, 3:5-*diamino*-.
 Phenoxazine, *diamino*-.
 Phenylacetyleneaniline.
 Phenylamino-*m*-tolylmethanes.

Amines. See:—

Phenylbenzothiazole, amino-.
 Phenyl*tert.* butylamine.
 Phenylcamphorformeneamine.
m-Phenylenediamine.
 Phenylguanidine, amino-.
 Phenylhydrazoncarbodi-*p*-tolylamine.
 Phenylmethylnitrosoamine.
 2-Phenyl-4-methylquinoline, 6-amino-.
 2-Phenylnaphthalene, 2'-amino-.
 3-Phenylquinoline, 2-amino-.
 Phenylthiouine.
 1-Phenyl-4:4:6-trimethyldihydropyrimidine, 2-amino-.
 Picrylnaphthylamines.
p-Propionylaniline.
 Propionyl-*o*-flavaniline.
*iso*Propylallylaniline.
*iso*Propylamine.
 β -Propyl*sec.* amylhydroxylamine.
 Propyl*iso*butylamine.
 β -Propyl-*sec.*- and -*tert.*-hexylhydroxylamines.
 Propyl*iso*propylaniline.
 Quinoline, 6-amino-.
 Silicotriphenylguanidine.
 Tetra-aniline.
 2:2'-Tetrabenzyl-diamino-1:1-dinaphthylmethane.
 2:2'-Tetraethyl-diamino-1:1-dinaphthylmethane.
l-ac-Tetrahydro- β -naphthylamine.
 Tetramethyl-diaminodinaphthylmethanes.
as-Tetramethyl-diaminodiphenylethane.
 Tetraphenylamine, di-amino-.
 Tetraphenylguanidine.
 Tetraphenyl-*o*-phenylenediamine.
 Tolidine.
 Toluidines.
 Tolyldiguanides.
 Tolylenediamines.
 3-Tolyl-4'-hydroxyphenylamine.
 Tolylnaphthylamine.
o-Tolylthiouine.
 Triacetoneamine.
 Trianiline.
 Tribenzylamine.
 Triethylamine.
 Triethylenediamine.
 Trimethylamine.
 4:4:6-Trimethyldihydropyrimidine, 2-amino-.
 Trimethylhydriudamine.
 β -Triphenylguanidine.
 Tripropylenediamine.
 Xylidines.
m-Xylamine.
m-Xyl-*p*-toluidine, amino-.

Amino-acids in plants (EMMERLING),
 A, ii, 612.

Amino-acids, formation of benzoyl derivatives of, by the fission of proteids (SCHULTZE), A., i, 595.
 aromatic, glucinyl derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 493.

α -**Amino-acids**, conversion of, into phenylhydantoins (MOUNEYRAT), A., i, 644.

Amino-acids. See also under Racemic.

Amino-ketones. See Ketones.

Ammonia, spectra of (HARTLEY and DOBBIE), T., 318; P., 1900, 14.

electrolysis of (SZARVASY), T., 604; P., 1900, 3.

liquid, some properties of (FRENZEL), A., ii, 474.

electrical conductivity of solutions of (FRANKLIN and KRAUS), A., ii, 382.

conductivity temperature coefficient of solutions of (FRANKLIN and KRAUS), A., ii, 645.

molecular dissociation of, in aqueous solutions (HANTZSCH and SEBALDT), A., ii, 69.

relation between, and salts in aqueous solution (KONOWALOFF), A., ii, 265.

solubility of aqueous, in potassium carbonate solution (NEWTH), T., 775; P., 1900, 87.

distribution of, between chloroform and water (DAWSON and McCRAE), T., 1242; P., 1900, 172.

equilibrium between manganous salts and (HERZ), A., ii, 68.

equilibrium in the partition of an acid between cadmium hydroxide and (HERZ), A., ii, 532.

equilibrium in the partition of an acid between zinc hydroxide and (HERZ), A., ii, 337.

distillation of, in the estimation of nitrogen (BENEDICT), A., ii, 573.

action of iodine on gaseous (HUGOT), A., ii, 274.

influence of, on magnesium salts (SCHIEBER), A., ii, 345.

action of, on mercuric iodide and mercuridiammonium iodide (FRANÇOIS), A., ii, 208, 280, 346.

action of dry sulphur dioxide on dry (DIVERS), P., 1900, 104; (DIVERS and OGAWA), T., 327; P., 1900, 38; (SCHUMANN), A., ii, 271.

influence of, on the action of nitrifying organisms (WARINGTON), P., 1900, 66.

formation of, in the liver (JACOBY), A., ii, 671.

compound of, with ferrous iodide (JACKSON and DERBY), A., ii, 596.

Ammonia, gaseous, compounds of, with lithium bromide (BONNEFOI), A., ii, 478.
 compounds of, with mercuric chloride, formulæ of (HOFMANN and MARBURG), A., ii, 279.
 hydroxides of, heat of formation of (DE FORCRAND), A., ii, 476.
 estimation of (VILLIERS and DUMESNIL), A., ii, 310.
 estimation of, improvement in Pélégot's absorption apparatus for the (PANNERTZ), A., ii, 621.
 estimation of nitrogen and, in water, apparatus for (WESTON), A., ii, 685.
Ammoniacum resin, examination of (DIETERICH), A., ii, 118.
Ammonio-ammonium and **Ammonio-nitrogen iodides** (HUGOT), A., ii, 274.
Ammonio-cobalt salts. See under Cobalt.
Ammonio-copper salts. See under Copper.
Ammonio-mercury salts. See under Mercury.
Ammonium salts, isomerism of, with salts of hydroxylamine, and of hydrazine (SABANÉEFF), A., ii, 13.
Ammonium magnesium arsenate (AUSTIN), A., ii, 245.
 bromiodobromide (JACKSON and DERBY), A., ii, 596.
 chloride, temperature of maximum density of solutions of (DE COPPET), A., ii, 529.
 action of, on minerals (CLARKE and STEIGER), A., ii, 24, 219, 414.
 action of, on strontium chromate (DUMESNIL), A., ii, 625.
 perchlorate, use of, in the manufacture of new explosives (ALVISI), A., ii, 205.
 fluoride, compound of, with silver fluoride (GRÜTZNER), A., ii, 541.
 fluorohyperborate (MELIKOFF and LORDKIPANIDZÉ), A., ii, 139.
 telluriolate (WEINLAND and PRAUSE), A., ii, 399.
 mercuriodide, dissociation of (FRANÇOIS), A., ii, 142.
 permanganate (CHRISTENSEN), A., ii, 596.
 permanganomolybdates and salts with potassium (FRIEDHEIM and SAMELSON), A., ii, 547.
 vanadiomolybdates and silicovanadiomolybdates (FRIEDHEIM and CASTENDYCK), A., ii, 483.
 nitrate, change of the transition point of, through the addition of potassium nitrate (MÜLLER), A., ii, 188.

Ammonium phosphates (v. KNORRE), A., ii, 652.
 of beryllium, cadmium, and zinc, estimation of the metals in (AUSTIN), A., ii, 49.
 earthy phosphates, attempts to prepare (BARTHE), A., ii, 480.
 magnesium phosphate, composition of, (NEUBAUER; GOOCH and AUSTIN), A., ii, 108.
 sulphate as a manure (KLÖFFER), A., ii, 616.
 chromous sulphate (LAURENT), A., ii, 547.
 hydroximidosulphate, production of (DIVERS and HAGA), T., 689; P., 1900, 71.
 thiosulphate, preparation of, and action of heat on (DIVERS and OGAWA), T., 335; P., 1900, 39.
 double salt with silver and with, copper haloids, thiosulphates, and sulphites (ROSENHEIM and STEINHÄUSER), A., ii, 652, 653.
 sulphite, double, with silver and copper (ROSENHEIM and STEINHÄUSER), A., ii, 652.
 amidosulphite, formation and decomposition of (DIVERS and OGAWA), T., 237; P., 1900, 38.
 imidosulphite (DIVERS and OGAWA), P., 1900, 113.
 palladous trichlorosulphite (ROSENHEIM and ITZIG), A., ii, 282.
 sulphites, preparation of, and action of heat on (DIVERS and OGAWA), T., 335; P., 1900, 39.
 thioantimonite and double salt with silver (POUGET), A., ii, 84.
 dithiocarbonate as a substitute for hydrogen and ammonium sulphides (VÖGTHER), A., ii, 241.
 trithionate, preparation of, and action of heat on (DIVERS and OGAWA), T., 335; P., 1900, 39.
Ammonium organic compounds:—
Ammonium compounds, quaternary, formation of (FISCHER and WINDAUS), A., i, 224, 484.
 salts, organic stereoisomeric, characteristics of (WEDEKIND), A., i, 155.
 alcoholates (DECKER), A., i, 522.
 cyanate, solid, preparation and properties of (WALKER and WOOD), T., 21; P., 1899, 209.
 cyanates, substituted, transformation of (WALKER and WOOD), T., 33; P., 1899, 209.
 cyanide, action of, on acetone (v. GULEWITSCH), A., i, 476.
 platosemi-ethylene and -amine chlorides (JÖRGENSEN), A., i, 542.

Amygdalinamidoxime (SCHIFF), A., i, 49.
n-**Amyl alcohol**, solubility coefficients of water and (AIGNAN and DUGAS), A., ii, 68.
Amyl chloride, action of, on calcium carbide (LEFEBVRE), A., i, 323.
 nitrite, action of, on vision (FLEHNE), A., ii, 424.
 sulphide-mercuric iodide (SMILES), T., 164; P., 1899, 240.
*iso***Amyl nitrite**, action of acetone, of methyl propyl ketone, of ethyl alcohol, and of *iso*amyl alcohol on, in presence of alcoholic hydrogen chloride (KISSEL), A., i, 620.
Amylase, preparation of (YVON), A., i, 196.
 action of, on starch (POTTEVIN), A., i, 80.
*iso***Amylcitraconic acid** (LAWRENCE), P., 1900, 156.
Amylene (γ -methyl- β -butylene) nitrosate (IPATIEFF), A., i, 3.
 β -**Amylene** nitrosate (IPATIEFF), A., i, 3.
Amylogen and its hydrolysis (SYNIEWSKI), A., i, 78.
*iso***Amyloxyacetone** (KISSEL), A., i, 621.
*iso***Amylsuccinic acid**, melting point of (LAWRENCE), P., 1900, 156.
Amyloxanthic acid, sodium salt of, use of, in qualitative analysis (GRASSINI), A., ii, 510.
Amyrol (V. SODEN), A., i, 401.
Anæmia, pernicious, metabolism in (V. MORACZEWSKI), A., ii, 295.
 condition of the blood in (SMITH), A., ii, 416.
Anæsthetics, action of (MEYER; BAUM), A., ii, 156.
Anagyrine and its compounds and physiological action (SCHMIDT; LITERSCHIED), A., i, 513; (KLOSTERMANN), A., i, 515.
Analcite from Nova Scotia (CLARKE and STEIGER), A., ii, 25.
 action of ammonium chloride on (CLARKE and STEIGER), A., ii, 25, 219.
Analysis, application of the fractional precipitation of neutral salts to (FINDLAY), A., ii, 716.
 solubility of precipitates in (IMMERWAHR), A., ii, 642.
 use of iodic acid in (JØRGENSEN), A., ii, 620.
 elementary organic, absorption apparatus for (BENEDICT), A., ii, 439.
 qualitative, of the ammonium sulphide group (JEAN), A., ii, 619.
 use of ammonium dithiocarbonate in (VOGTHERR), A., ii, 241.
 VOL. LXXVIII. ii.

Analysis, qualitative, use of sodium amyloxanthate in (GRASSINI), A., ii, 510.
 quantitative, use of cobaltcyanides in (MILLER and MATHEWS), A., ii, 318; (MATHEWS), A., ii, 578.
 use of hydrogen peroxide in (FRIEDHEIM and BRÜHL), A., ii, 171.
 use of sodium thiosulphate in (FAKTOR), A., ii, 691.
 volumetric, Iceland spar as a standard in (MASSON), A., ii, 436; (THIELE and RICHTER), A., ii, 620.
 acidimetry and alkalimetry in (ASTRUC), A., ii, 572.
 See also Indicator.
Ancylite from Greenland (FLINK), A., ii, 410.
Andesite from the eruptive rocks from the Salzkammergut (v. JOHN), A., ii, 219.
Andesites from Maine (GREGORY), A., ii, 90.
 from Sumatra (MILCH), A., ii, 150.
Andradite from Dartmoor (BUSZ), A., ii, 217.
Anethole and its isomerides (ORNDORFF and MORTON), A., i, 289.
 and its analogues, oxidation of (BOUGAULT), A., i, 495.
Angolite (BREUSING), A., ii, 551.
Anhydride, $C_8H_8O_8$ from *l*-malic acid (WALDEN), A., i, 11.
Anhydrides, mixed, of acyclic and cyclic acids (BÉHAL), A., i, 8.
 of formic acid (BÉHAL), A., i, 580.
 organic, solubility of, in water (VAN DE STADT), A., i, 200.
 chloro-, inorganic, polymerisation of (ODDO), A., i, 92; (ODDO and SERRA), A., ii, 74.
Anhydrite, hydration of (ZUNINO), A., ii, 479.
 marine, formation of (VATER), A., ii, 541.
 and gypsum deposits at Oulx, Piedmont, minerals in the (COLOMBA), A., ii, 216.
Anhydro-acetyl and -benzoyl-acetone-aminocamphor (DUDEN and TREFF), A., i, 671.
Anhydro-*p*-acetylaminobenzyl alcohol (GOLDSCHMIDT), A., i, 436.
Anhydro-bases, and their azo-derivatives, constitution of (MELDOLA and EYNON), T., 1170; P., 1900, 166.
Anhydrobis-5-methoxy-7-methyldiketohydrindene-4-carboxylic acid and its esters (LANDAU), A., i, 662.
Anhydrodiacetone-carbamide, allylthiocarbamide, and -phenylthiocarbamide (TRAUBE and LORENZ), A., i, 115.

- Anhydroethylacetoacetate-aminocamphor** (DUDEN and TREFF), A., i, 673.
- Anhydro-*p*-formylaminobenzyl alcohol** and its benzoyl derivative (GOLDSCHMIDT), A., i, 285.
- β -Anhydrohomocamphoronic acid** (LAFWORTH and CHAPMAN), T., 453; P., 1900, 57.
- Anhydromalic acid** (WALDEN), A., i, 10, 11.
- p*-Anhydromethylaminobenzyl alcohol** (GOLDSCHMIDT), A., i, 436.
- Anhydro- α -naphthaquinone-2-acetonedicarboxylic acid**, 2-chloro-, ethyl ester (MICHEL), A., i, 670.
- Anhydro-*cis*-pentamethylenetricarboxylic acid** (BOTTOMLEY and PERKIN), T., 304; P., 1900, 16.
- Anhydrotriacetonediguanidine** (TRAUBE and SCHWARZ), A., i, 117.
- Anhydrotrisdiketohydrindene** (LIEBERMANN and FLATOW), A., i, 667.
- Anilides**, action of formaldehyde on (GOLDSCHMIDT), A., i, 285, 436.
action of hypobromous acid on (CHATTAWAY, ORTON, and HURTLEY), A., i, 152.
action of hypochlorous and hypobromous acids on (CHATTAWAY and ORTON), T., 134, 789, 797; P., 1899, 232; P., 1900, 102, 112; (CHATTAWAY, ORTON, and HURTLEY), T., 800; P., 1900, 125; (ARMSTRONG), T., 1047; P., 1900, 160.
substituted (CHATTAWAY, ORTON, and HURTLEY), A., i, 151; (CHATTAWAY and ORTON), A., i, 152, 643.
substitution in (ARMSTRONG), T., 1047; P., 1900, 160.
- Aniliminocarbaminothioglycollic acid** (HARRIES and KLAMT), A., i, 413.
- Aniline** and its hydrochloride, electrolysis of fused mixtures of (SZARVASY), T., 208; P., 1899, 194.
solubility coefficients of water and (AIGNAN and DUGAS), A., ii, 68.
action of, on α -benzoylaminocinnamic anhydride (ERLENMEYER), A., i, 550.
reactions of, with hydroxy- and unsaturated compounds (TINGLE), A., i, 544.
oxidation of (BAMBERGER and TSCHIRNER), A., i, 435.
meta-sulphonation of (ARMSTRONG and BERRY), P., 1900, 159.
antimonio-chloride and -iodides (HIGBEE), A., i, 285.
hydrochloride, double salt of, with bismuth chloride (HAUSER and VANINO), A., i, 641.
- Aniline**, hydrochloride, action of, on phosphoryl chloride (ODDO), A., i, 92.
stannobromide (RICHARDSON and ADAMS), A., i, 151.
tellurium bromides and chlorides (LENHER), A., i, 379.
- Aniline**, 3:4-*di*-, 2:3:4- and 3:4:6-*tri*-, and 2:3:4:6-*tetra*-bromo- (WHEELER and VALENTINE), A., i, 26.
pentabromo-, diazo-salts of (HANTZSCH and SMYTHE), A., i, 316.
4-*mono*-, 4:6-*di*-, and 2:4:6-*tri*-bromo-3-iodo- (WHEELER and VALENTINE), A., i, 26.
3-chloro-4-*mono*-, 4:6-*di*-, and 2:4:6-*tri*-bromo-, 4-chloro-3-bromo-, 3:4:6-chlorobromonitro-, and 3-chloro-4-bromo-2:6-*dinitro*- (WHEELER and VALENTINE), A., i, 25, 26.
4:2-, and 2:4-chlorobromo- (CHATTAWAY and ORTON), A., i, 643.
"cyano-" and its acetyl and anhydrobenzoyl derivatives (MEVES), A., i, 483.
o-nitro-, action of formaldehyde on (MEYER and ROHMER), A., i, 222.
methylated, nitrosoamines of (BAMBERGER and MÜLLER), A., i, 217.
- Anilineazobenzoylacetone**, *i-b-p*-nitro-. See Benzeneazobenzoylacetone, *p*-nitro-.
- Anilinoacetic acid**, action of sodium and amyl alcohol on (EINHORN and PFEIFFER), A., i, 221.
ethyl ester, action of sodium ethoxide on (VORLÄNDER and DE MOUILPIED), A., i, 644.
- Anilindiphenylbenzoquinone** (BORSCHE), A., i, 594.
- Anilindiphenylguanidine**, action of carbonyl chloride on (SCHALL), A., i, 464.
- 7-Anilino-3:4-diphenyltriazole** (BUSCH and BAUER), A., i, 415.
- Anilinoembelic acid** (HEFFTER and FEUERSTEIN), A., i, 498.
- 3-Anilino-*flavinduline* chloride**, 2-amino- (KEHRMANN and STOFFEL), A., i, 225.
- 3-Anilino-1-indone** (SCHLOSSBERG), A., i, 665.
- Anilinoinduline**, B₂, 4, electrolytic preparation of (SZARVASY), T., 207; P., 1899, 194.
- Anilinomalonic acid**, ethyl ester, action of nitrous acid on (CURTISS), A., i, 482.
- Anilinomauveine** (*anilinophenylphenosafranine*) (FISCHER and HEPP), A., i, 462.

- Anilino-4-methylpyrimidines**, 2- and 6-, and their amino-derivatives (GABRIEL and COLSON), A., i, 54.
- Anilinophenosafranine** (FISCHER and HEPP), A., i, 463.
- Anilinophenylglycine-*o*-carboxylic acid**, and esters (VORLÄNDER and WEISSBRENNER), A., i, 295.
- 9-Anilino-7-phenylnaphthaphenazonium 7-chloride**, 10-amino- (KEHRMANN and VALENCIEN), A., i, 255.
- Anilinophenylphenosafranine** (FISCHER and HEPP), A., i, 463.
- 5-Anilino-4-phenyltriazole** and its acetyl and 3-methyl derivatives (BUSCH and BAUER), A., i, 414.
- Animal fluids**, estimation of the reducing power of (ROSIN), A., ii, 319.
juices and tissues, chemico-physical relations of (OKER-BLOM), A., ii, 290, 356, 607.
matter, detection of nitric acid in (VITALI), A., ii, 46.
- Animals**, marine, death temperature of (VERNON), A., ii, 93.
- Anime**, East and West Indian, examination of (DIETERICH), A., ii, 118.
- Anisaldehyde** (*o*-methoxybenzaldehyde), preparation of (LABBE), A., i, 177.
- p*-Anisaldoximes** (CARVETH), A., i, 34.
- Anisidine**, chloro-*o*-, *m*- and *p*-, and their acetyl derivatives (REVERDIN and ECKHARD), A., i, 28.
d-nitro-, diazotisation of (MELDOLA and WECHSLER), T., 1172; P., 1900, 167.
- “**Anisidines**, cyano-*o*-, and *p*-,” and their guanidine derivatives (MEVES), A., i, 483.
- Anisoin**, preparation of (ORNDORFF and MORTON), A., i, 289.
- Anisole**, diamino-, dihydrochloride (HERZIG and AIGNER), A., i, 545.
o-, *m*-, and *p*-chloro-, and their nitro-derivatives (REVERDIN and ECKHARD), A., i, 28.
- Anisole-diazocyanides**, and -diazonium cyanide (HANTZSCH), A., i, 567.
- Anisolesyndiazotate**, potassium (HANTZSCH), A., i, 567.
- Anisole-diazohaloids** (HANTZSCH), A., i, 568.
- $\alpha\beta$ -Anisoylanisylcarbamide** (VAN DAM), A., i, 172.
- Anisylanthranilic acid** (PSCHORR and WOLFES), A., i, 170.
- Ankerite** from Missouri (ROGERS), A., ii, 550.
- Annatto**, colouring matter of (ZWICK), A., i, 513.
- Annual General Meeting**, T., 555; P., 1900, 77.
- Anorthoclase** from Portland, Maine (LORD), A., ii, 603.
- Anthracene**, refraction of (CHILESOTTI), A., i, 339.
- Anthracite** and anthraxolite from Canada (ELLIS and LAWSON), A., ii, 660.
estimation of volatile combustible matter in (MEADE and ATTIX), A., ii, 168.
- Anthragallol** (1:2:3-*trihydroxyanthraquinone*), its acyl and halogen derivatives (SLAMA), A., i, 181.
- Anthraglucosennin** (TSCHIRCH and HIEPE), A., i, 682.
- Anthranilic acid** (*o*-aminobenzoic acid), from *o*-nitrotoluene (PREUSS and BINZ), A., i, 392.
action of acetonitrile on (BOGERT and GOTTHELF), A., i, 412.
action of chloroform and potash on (ELLIOTT), T., 213; P., 1899, 243.
ethyl ester, formation of indigotin from (VORLÄNDER and KOETTNITZ), A., i, 649.
glycyl derivatives of the esters of (EINHORN and OFFENHEIMER), A., i, 493.
- Anthranilic acid**, 3:6-dichloro- (GRAEBE and GOUREVITZ), A., i, 547.
- Anthranilphenylacetic acid** (HENZE), A., i, 119.
- 9-Anthranol-2-carboxylic acid** and *d*-nitro- (LIMPRICHT and LACH), A., i, 31.
- Anthraphenones** (PERRIER), A., i, 350.
- Anthraquinone-2-carboxylic acid** and *d*-nitro- (LIMPRICHT and LACH), A., i, 31.
- Antifebrin**, test for, in antipyrine (RAIKOW and SCHARBANOW), A., ii, 456.
- Antimony**, alleged transformation of phosphorus into (WINKLER), A., ii, 476; (FITTICA), A., ii, 651.
- Antimony alloys** with tin (REINDERS), A., ii, 731.
- Antimony compounds** with sulphur (FAKTOR), A., ii, 598.
- Antimony trichloride** in cryoscopy (TOLLOCKO), A., ii, 190.
pentachloride, compound of, with nitrosyl chloride (VAN HETEREN), A., ii, 137.
- Antimonous oxide** action of, on sulphur chloride (ODDO and SERRA), A., ii, 74.
- Tri- and tetra-antimonie acids** and their salts (DELACROIX), A., ii, 145.
- Antimony sulphide**, action of hydrogen on (PÉLABON), A., ii, 352.
- Antimony, organic compounds** (PARTHEIL and MANNHEIM), A., i, 479.

- Antimony**, double halogen salts of, with aniline and the toluidines (HIGBEE), A., i, 285.
- Antimony, estimation and separation of:—**
 estimation of, electrolytically (OST and KLAPPROTH), A., ii, 692.
 estimation of, in ores (BROWN), A., ii, 51.
 estimation and separation of arsenic and, in ores (BECK and FISHER), A., ii, 312.
 separation of arsenic and tin from (MARBURG), A., ii, 248.
- Antipeptone** (KUTSCHER), A., i, 72.
- Antipyrine** (1-phenyldimethylpyrazolone), compounds of, with copper chloride, and with metallic benzoates and salicylates (SCHUYTEN), A., i, 57.
 compounds of, with mercury halogen salts (VILLE and ASTRE), A., i, 362, 411.
 action of iodine on (BOUGAULT), A., i, 311, 312.
 excretion of (LAWROFF), A., ii, 741.
 and amino-, reactions of (HOFFMANN), A., ii, 379.
 tests for antifebrin, exalgin and phenacetin in (RAIKOW and SCHARBANOW), A., ii, 456.
- Antipyrine, bromo-** (MICHAELIS and SCHWABE), A., i, 695.
 iodo- (BOUGAULT), A., i, 312.
 compounds of, with mercury salts (BOUGAULT), A., i, 312, 361.
- Antipyrine benzoates.** See Benzopyrines.
- Antipyrine-1-p-benzoic acid** (*antipyrine-Bz-p-carboxylic acid*), (MICHAELIS and SUDENDORF), A., i, 696.
- Antipyrine salicylates.** See Salipyrines.
- Apigenin** (1-3-4'-trihydroxyflavone), synthesis of, and its triacetyl derivative (CZAJKOWSKI, v. KOSTANECKI, and TAMBOR), A., i, 504.
- Apigenin and Apiin**, action of nitric acid on (PERKIN), T., 416; P., 1900, 44.
- Apigetrin**, and nitro- (PERKIN), T., 420; P., 1900, 45.
- isoApiole**, acid, $C_{12}H_{14}O_6$, from the oxidation of (BOUGAULT), A., i, 495.
- Apios tuberosa**, composition of (BRIGHETTI), A., ii, 498.
- Aplysia**, digestion of carbohydrates by (RÖHMANN), A., ii, 289.
- Apple chips**, estimation of zinc in (LEHMANN), A., ii, 170.
 trees. See Agricultural Chemistry.
- Arabic acid** from beetroot (VOTOČEK and ŠEBOR), A., i, 208.
- Arabinose** from tragacanth (WIDTSOE and TOLLENS), A., i, 207.
- Arabinose**, fermentation of (SALKOWSKI), A., i, 628.
- d-Arabinose**, phenylbenzylhydrazone of (RUFF and ÖLLENDORFF), A., i, 77.
- l-Arabinose**, amylicmercaptal and diphenylhydrazone of (NEUBERG), A., i, 539.
 phenyllosazones of (NEUBERG), A., i, 139.
 conversion of, into l-erythrose (WOHL), A., i, 140.
- r-Arabinose** in urine, and phenylhydrazones, osazones, and amylicmercaptal of (NEUBERG), A., i, 539.
- Aragonite** and calcite, physicochemical relations of (FOOTE), A., ii, 541.
- Aralia nudicaulis**, araliene and oil from (ALPERS), A., i, 107.
- Araroba powder** (HESSE), A., i, 41.
- Arctostaphylos Uva-ursi**, constituents of (PERKIN), T., 424; P., 1900, 45.
- Arenicolæ**, the pigment of the (FAUVEL), A., ii, 227.
- Arginine** from coniferous plants (SUZUKI), A., ii, 562.
 from the proteid of conifer seeds (SCHULZE and WINTERSTEIN), A., ii, 101.
 from malt, formation of (PETIT and LABOURASSE), A., ii, 612.
 constitution of (SCHULZE and WINTERSTEIN), A., i, 110.
 identity of animal and vegetable (SCHULZE), A., i, 515.
 action of, on the tryptic digestion of proteid (LAWROFF), A., ii, 28.
- Argon**, new lines in the spectrum of (NASINI, ANDERLINI, and SALVADORI), A., ii, 181.
 relative rates of effusion of, and of other gases (DONNAN), A., ii, 390.
 solubility of, in water (ESTREICHER), A., ii, 205.
 passage of, through thin films of indiarubber (RAYLEIGH), A., ii, 342.
 viscosity of, as affected by temperature (RAYLEIGH), A., ii, 590.
- Aromatic compounds**, colour reaction for certain (BURGESS), A., ii, 774.
 series, isomerism in the (OECHSNER DE CONINCK), A., i, 592.
- Arsenic**, supposed transformation of phosphorus into (WINKLER), A., ii, 476; (FITTICA), A., ii, 651; (NÖLTING and FEUERSTEIN), A., ii, 722.
 action of potassiumammonium on (HUGOT), A., ii, 14.
 in the organism, origin, localisation, and elimination of (GAUTIER), A., ii, 152, 226.

- Arsenic**, elimination of, from the system (SCHERBATSCHIEFF), A., ii, 622.
 metabolism of (GAUTIER), A., ii, 670.
Arsenious oxide, action of, on sulphur chloride (ODDO and SERRA), A., ii, 74.
Arsenic acid, estimation of, iodometrically (GOOCH and MORRIS), A., ii, 686.
Arseno-duodeci- and -luteo-tungstic acids (KEHRMANN and RÜTTIMANN), A., ii, 145.
Arsenic sulphide, action of hydrogen on (PÉLABON), A., ii, 652.
 new sulphide of (As_3S) (SCOTT), T., 651; P., 1900, 69.
Arsenic, detection, estimation, and separation of:—
 Bettendorf's test for (DIETZE; ENELL; FRERICHS), A., ii, 244.
 biological proof of the presence of (ABEL and BUTTENBERG), A., ii, 299.
 biological detection of, in skin, hairs, perspiration, and urine (SCHOLTZ), A., ii, 244.
 detection of, in the organism (SCHERBATSCHIEFF), A., ii, 622.
 detection and estimation of, in the organism (GAUTIER), A., ii, 168.
 estimation of, in alloys and metals (HOLLARD and BERTIAUX), A., ii, 438.
 estimation of, in Paris green (SMITH), A., ii, 47; (HAYWOOD; HILGARD), A., ii, 758.
 estimation and separation of antimony and, in ores (BECK and FISHER), A., ii, 312.
 separation of antimony and tin from (MARBURG), A., ii, 248.
Arsenical insecticides, adulteration and analysis of (HAYWOOD; HILGARD), A., ii, 758.
Asbestos, composition of (VAN DER BELLEN), A., ii, 602.
 retention of moisture by (AUCHY), A., ii, 309.
Asbestos filters (LOHSE and THOMAS-CHEWSKI), A., ii, 508.
Ascitic fluid, human, lipolytic ferment in (HAMBURGER), A., ii, 420.
Ash analysis, apparatus for (TUCKER), A., ii, 52; (SHUTTLEWORTH and TOLLENS), A., ii, 111.
 See also Agricultural Chemistry.
Asparagine, accumulation of, in leguminous plants (BRÉAL), A., ii, 301.
Aspergillus niger, proteolytic enzyme produced by (MALFITANO), A., ii, 493.
 nutritive value of raffinose for (GILLOT), A., ii, 99.
Aspergillus Oryza, composition of the spores of (ASÓ), A., ii, 563.
 a ferment of "sake" (KOZAI), A., ii, 743.
Asphalt from Barbados (BEDSON), A., ii, 20.
Aspidin and Aspidinol (HAUSMANN), A., i, 49.
Association. See Affinity.
Astragalose from *Astragalus caryocarpus* (FRANKFORTER), A., ii, 747.
Asymmetry and vitalism (ULPIANI and CONDELLI), A., ii, 463.
Atmospheric air, composition of, at various altitudes (HINRICHS), A., ii, 649.
 combustible gases of (GAUTIER), A., ii, 537, 538, 720.
 heat of vaporisation of (BEHN), A., ii, 260.
 liquid, distillation of, and the composition of the gaseous and liquid phases (BALY), A., ii, 589.
 change in composition of, on evaporation (GROUSINOFF), A., ii, 720.
 influence of the temperature of, on Bacteria (MACFADYEN and ROWLAND), A., ii, 610.
 of forests, high mountains, and the sea (GAUTIER), A., ii, 537, 538.
 of the Tharandt forest, sulphur dioxide in the (WISLICENUS), A., ii, 38.
 of Paris, combustible gases of the (GAUTIER), A., ii, 537, 720.
 estimation of carbon dioxide in (WALKER), T., 1110; P., 1900, 164; (LETTIS and BLAKE), A., ii, 622.
 estimation of formaldehyde in (WINTGEN), A., ii, 117.
Atomic heats, additivity of (MEYER), A., ii, 464.
Atomic theory, Dalton's, genesis of (DEBUS), A., ii, 136.
Atomic weight of a new metal from uranium residues (CURIE), A., ii, 83.
 of barium, boron, bromine, carbon, chlorine, hydrogen, oxygen, silver, sodium, and sulphur (HINRICHS), A., ii, 534.
 of radio-active barium (CURIE), A., ii, 83, 654.
 of boron (GAUTIER), A., ii, 14, 15; (HINRICHS), A., ii, 534, 539.
 of cobalt (RICHARDS and BAXTER), A., ii, 78.
 of gadolinium (BENEDICKS), A., ii, 209; (DEMARÇAY), A., ii, 597.
 of iron (RICHARDS and BAXTER), A., ii, 407.

- Atomic weight** of nitrogen (DEAN), T., 117; P., 1899, 213.
 of palladium (HARDIN), A., ii, 85.
 of tungsten (SMITH and HARDIN), A., ii, 80.
 of yttrium (MUTHMANN and BÖHM), A., ii, 209.
- Atomic weights**, report of the American Committee on (CLARKE), A., ii, 339.
 report of the International Commission on (LANDOLT, OSTWALD, and SEUBERT), A., ii, 533.
 and crystallography (MUTHMANN), A., ii, 533; (LINCK), A., ii, 717.
 in relation to physical properties (SANDER), A., ii, 137; (BAYLEY), A., ii, 188.
 and specific heat (TILDEN), A., ii, 524.
- Atoms**, additive nature of the properties of (MEYER), A., ii, 533.
- Atriplex semibaccata*. See Agricultural Chemistry.
- Atropa Belladonna*, estimation of the alkaloids of the leaves of (SCHMIDT), A., ii, 379.
- Atropine**, action of chloroform or ether on (SCHAER), A., ii, 455.
- i*-**Atropine** from *Scopolia atropoides* roots (HESSE), A., i, 50; (GADAMER), A., i, 356.
- Atroscine**, (*atrascine*, *i*-*scopolamine*, *i*-*hyoscine*), from commercial scopolamine (HESSE), A., i, 50; (GADAMER), A., i, 356.
- Augite** from Japan (IWASAKI), A., ii, 286.
 from Latium (ZAMBONINI), A., ii, 662.
 from Moravia (PELIKAN), A., ii, 662.
- Auramine**, constitution of (STOCK), A., i, 258.
- Austrium** (PŘIBRAM), A., ii, 347.
- Autodigestion** of the pancreas (PFÖRRINGER), A., ii, 28.
- Autoxidation**. See Oxidation.
- Axinite** from Japan (JIMBŌ), A., ii, 87.
- Azelaic acid** (*heptanedicarboxylic acid*), preparation of (MAQUENNE), A., i, 135.
- Aziminobenzene**, ketochlorides and quinones of, and acids therefrom (ZINCKE, STOFFEL, and PETERMANN), A., i, 524.
- Aziminooethylenedicarboxylic acid**. See 1:2:3-Triazole-4:5-dicarboxylic acid.
- Aziminolethylenedicarboxylic acid**. See 1-Hydroxy-1:2:3-triazole-4:5-dicarboxylic acid.
- Azines**, formation of, by the decomposition of semicarbazones (KIPPING), P., 1900, 64; (YOUNG and WITHAM), P., 1900, 73.
- Azoamines** and **Azoamine oxides**, difference in behaviour of (BAMBERGER and STIEGELMANN), A., i, 193.
- Azobenzene**, electrolysis of (LÖB), A., i, 697; ii, 706.
 nitro-derivatives of (WERNER and STIASNY), A., i, 194; (MEIGEN and NORMANN), A., i, 702.
- Azobenzene-4:3':5'-trisulphonic acid** and its 4'-amino-derivative and their salts (JUNGHAHN), A., i, 418.
- Azo-compounds** differentiated from hydrazine compounds by bromine (ARMSTRONG), P., 1899, 243.
o-amino-, triazines from (BUSCH and HARTMANN), A., i, 59.
- Azo-compounds**. See preceding entries, and also :—
 Acetophenoneazobilirubin.
 Acetylaminobenzeneazo-1-phenyl-3-methylpyrazolone.
 Acetylaminophenylazoacetoacetic acid.
 Aldazines.
 Aniline, diazo salts of.
 Anisole diazocyanides.
 Anisole diazohaloids.
 Anisole diazonium cyanide.
 Anisolesyndiazotates.
 Azodibenzoyl.
 Azodicarbamide.
 2-Azolepidine.
 Azo-mono- and -di-quinoline.
 Azotoluene.
 Azoxyanisole.
 Azoxybenzene.
 Azoxydiquinoline.
 Benzaldazine.
 Benzeneazobenzoylacetone.
 Benzeneazo-*o*-dibromophenol.
 Benzeneazo-4-chloro-*m*-phenylenediamine.
 Benzeneazodiacetylsuccinic acid.
 Benzeneazodiphenylamine oxide.
 Benzeneazo-ethyl- β -naphthylamine.
 3-Benzeneazo-6-hydroxybenzylideneacetophenone.
 Benzeneazomethylaniline oxide.
 Benzeneazo- β -naphthol.
 Benzeneazo- β -naphthylcarbamic acid.
 Benzeneazo-*o*-nitrophenol.
 Benzeneazonitrosobenzene.
 Benzeneazophenol.
 Benzeneazosalicylaldehyde.
 Benzene-6-diazoaminoquinoline.
 Benzenediazocyanide.
 Benzenediazonium salts.
 Benzenediazonium-*o*-sulphonic acid.
 Bisdiazoacetic acid.
 Bisdiazobenzenephenyltetrazone.
 Bisdiazobenzene-*p*-tolyltetrazone.
 Bisdiazomethane (*dihydrotetrazine*).
 Bisdiazotetrazones (*octazones*).
 Bis-*p*-diazotoluenephenyltetrazone.
 Bis-1-phenyl-3-methylpyrazoloneazobenzene.

Azo compounds. See:—

Caffeineazo-compounds.
 Capronaldazine.
 ψ -Cumenediazocyanides.
 ψ -Cumenediazohaloids.
 ψ -Cumenediazonium cyanide.
 ψ -Cumenesyndiazotates.
 Diazoacetic acid.
 Diazoaminobenzene.
 Diazoaminobenzenedi-*p*-sulphonic acid.
 Diazoazobenzenetrisulphonic acid.
 Diazobenzene.
 Diazobenzenebenzylamine.
 Diazobenzene chloride and nitrate.
 Diazobenzenehydrazides.
 Diazobenzene-*m*-hydrazinobenzoic acid.
 Diazobenzeneimide.
 Diazobenzenephénylhydrazide.
 Diazobenzenepiperidide.
 Diazobenzene-*o*-sulphonic acid.
 Diazobenzoic acid phenylhydrazide.
 Diazocaffeine.
 Diazo-compounds.
 Diazocyanides.
 Diazocymene nitrate.
 Diazohaloids.
 Diazohydrazides.
 Diazohydroxides.
 Diazohydroxyaminobenzene.
 Diazomethane.
 Diazonaphthalene nitrate.
anti-Diazonaphthalene salts.
 Diazonium salts.
 Diazosalicylic acid.
 Diazotates.
 Diazotetronic anhydride.
 Diazotetronosulphonic acid.
 Diazothiocyanates.
p-Diazotoluenephénylhydrazide.
 Diazotoluenepiperidide.
 Dibenzoyl-*o*-benzylideneazine.
 Diethylaminophenyl- μ -cyanoazomethine derivatives.
 Dihydrodiazotetronic anhydride.
 Dihydrotetrazine.
 Dihydroxydiazobenzene.
 Dimethylaminobenzene-6-azoquinoline.
 Dimethyldiaminochlorophenazine.
 Dimethylaminophenyl- μ -cyanoazomethine derivatives.
 2:4-Dimethylbenzaldazine.
 Dimethyltolueneazammonium silver iodide.
 Diphenylazoethylenetrimethylenediamine.
 Diphenyltetrazonium chloride.
 2-Hydrazolepidine.
 2-Hydrazoquinoline.
 Hydroxyazobenzene.

Azo-compounds. See:—

Hydroxyazo-compounds.
 Hydroxyazoxybenzenes.
 Hydroxydinitrobenzeneazodiphenylaminesulphonic acid.
 Menthazine.
 Mesitylenediazoidide.
p-Methylbenzaldazine.
 Naphtha- β -ketopentamethylene-azine.
 Naphthaphenazine.
 1:2-Naphthazine-6:6'-disulphonic acid.
 Octazones.
 Oxyazo-compounds.
 Phenolazobenzeneazophenol.
 Phenyl diazopyridothiazinone.
 2-Phenyl-3-(or 5)-methyl-4-*p*-nitrobenzeneazo-5-(or 3)-phenylpyrazole.
 1-Phenyl-3-methylpyrazoloneazobenzeneazoacetoacetic acid.
 3-(or 5)-Phenyl-4-*p*-nitrobenzeneazo-5-(or 3)-methyliso-oxazolone.
 3-(or 5)-Phenyl-4-*p*-nitrobenzeneazo-5-(or 3)-methylpyrazolone.
 Propionaldazine.
 Resorcinol-*o*-azosalicylic acid.
p-Sulphobenzeneazodiphenylamine-sulphonic acid.
p-Tolueneazo-4-chloro-*m*-phenylenediamine.
o-Tolueneazotolylcarbamic acid.
 Trisbisdiazomethanetetra-carboxylic acid.
as-m-Xyleneazo-4-chloro-*m*-phenylenediamine.
Azodibenzoyl (STOLLE and BENRATH), A., i, 531.
Azodicarbamide, condensation of, with aromatic aldehydes (YOUNG and WITHAM), T., 224; P., 1900, 5.
Azo-dyes, dynamical researches on (GOLDSCHMIDT and KEPPELER), A., i, 367.
Azoimide, electrolysis of (SZARVASY), T., 606; P., 1900, 3; (PERATONER and ODDO), A., ii, 651.
 dissociation constant of (WEST), T., 705; P., 1900, 74.
 reduction of (CURTIUS and DARAPSKY), A., ii, 475.
 metallic derivatives of (CURTIUS and DARAPSKY), A., ii, 474.
2-Azolepidine (MARCKWALD and CHAIN), A., i, 521.
Azonium bases, structure of (GREEN), A., i, 119.
 wandering of the *o*-quinonoid double linking in (KEHRMANN), A., i, 254.
 as pseudo-bases (HANTZSCH and KALB), A., i, 114.

- Azophenine**, electrolytic preparation of (SZARVASY), T., 207; P., 1899, 194.
- 2-Azoquinoline** and its salts (MARCKWALD and MEYER), A., i, 521.
- 6-Azo-mono- and -di-quinoline** (KNEUFEL), A., i, 188.
- Azotoluene**, *o*-amino-, action of phenyl- and *p*-tolyl-thiocarbimides on (BUSCH and HARTMANN), A., i, 59.
- 4:4'-Azotoluene**, 2:2'-dinitro- (MEIGEN and NORMANN), A., i, 702.
- p*-Azoxyanisole**, crystalline modifications of (SCHENCK), A., ii, 339.
- cryoscopic constant of (AUWERS), A., ii, 263.
- Azoxybenzene**, nitro-derivatives of (WERNER and STIASNY), A., i, 194.
- Azoxydiquinoline** (KNEUFEL), A., i, 188.
- Azthiotetride** derivatives (HELLSING), A., i, 518.

B.

- Bacillus anthracis*, bacteriolysis of the (MALFITANO), A., ii, 677.
- action of, on carbohydrates (NAPIAS), A., ii, 493.
- coli* and *B. d'Eberth*, action of, on nitrates (GRIMBERT), A., ii, 97.
- coli communis*, gas producing power of, under different conditions (PENNINGTON and KÜSEL), A., ii, 678.
- fermentationis cellulosa*, morphology of (OMELIANSKY), A., ii, 493.
- lactic acid, effect of various substances on the (BOKORNY), A., ii, 297.
- formation of acetic acid by (BARTHEL), A., ii, 742.
- aerogenic, of milk, identity of, with the pneumo-bacillus of Friedländer (GRIMBERT and LEGROS), A., ii, 493.
- pyocyaneus*, colouring matters of (BOLAND), A., i, 70.
- typhoid, action of toxic products of, on the heart (KEMP and DEWEY), A., ii, 559.
- viscosus bruxellensis*, behaviour of (VAN LAER), A., ii, 158.
- Bacteria**, influence of the temperature of liquid air and of liquid hydrogen on (MACFADYEN and ROWLAND), A., ii, 610.
- influence of metals on broth cultures of (ISACHENKO), A., ii, 230.
- action of solutions of salts of fatty acids on (LÖVINSON), A., ii, 745.
- replacement of potassium salts by rubidium salts in the development of (LOEW), A., ii, 36.
- Bacteria**, influence of, on the decomposition of bones (STOKLASA, DUCHÁČEK, and PITRA), A., ii, 684.
- importance of, for plant development (STOKLASA), A., ii, 360.
- acetic (HENNEBERG), A., ii, 297.
- denitrifying and nitrifying. See Agricultural Chemistry.
- ester-producing (MAASSEN), A., ii, 231.
- Bacterium**, a sugar (WARD and GREEN), A., ii, 33.
- sorbose, oxidation of erythritol by the (BERTRAND), A., i, 377.
- Balance Sheet** of the Chemical Society, March, 1900, and of the Research Fund, March, 1900. See Annual General Meeting, T., 588.
- Balsam**, of *Abies canadensis* (TSCHIRCH and BRÜNING), A., i, 678.
- of *Abies pectinata* (TSCHIRCH and WEIGEL), A., i, 679.
- of *Larix decidua* (TSCHIRCH and WEIGEL), A., i, 680.
- Barbaloin**s, and their chloro- and bromo-derivatives (LÉGER), A., i, 512.
- Barbara praeox*, constituents of (GADAMER), A., i, 49.
- Barbituric acid**, nitroso- (*violuric acid*), heat of dissociation of (ABEGG), A., ii, 190.
- Barium amalgam** (KERP and BÜTTGER), A., ii, 656.
- Barium salts**, toxic action of, in plant culture (COUPIN), A., ii, 363; (SUZUKI), A., ii, 561.
- Barium aluminates** (ALLEN and ROGERS), A., ii, 727.
- borates, action of carbon dioxide on (MORSE and HORN), A., ii, 626.
- bromide, electrolysis of solutions of (SARGHEL), A., ii, 401.
- chlorate, decomposition products of (SODEAU), T., 137; P., 1899, 157.
- hydroxide, action of hydrogen peroxide on (DE FORCRAND), A., ii, 277.
- peroxides, hydrated (DE FORCRAND), A., ii, 344.
- phosphide, crystallised (JABOIN), A., ii, 76.
- hydroximidosulphate, production of (DIVERS and HAGA), T., 690; P., 1900, 71.
- thioantimonite (POUGET), A., ii, 84.
- Barium**, detection and separation of:—
- Barium, detection of calcium, strontium, and (DUMESNIL), A., ii, 625.
- separation of strontium, calcium and (KÜSTER), A., ii, 108.
- Barium**, radio-active (v. LÉNGYEL), A., ii, 402; (GIESEL), A., ii, 480; (DEBIERNE), A., ii, 586.

- Barium**, radio-active, atomic weight of (CURIE), A., ii, 83, 654.
- Barley**. See Agricultural Chemistry.
- Base**, $C_8H_{13}N$, $C_8H_{15}N$, and $C_8H_{17}N$, from methylcycloheptenoneoxime (WALLACH), A., i, 46.
- $C_8H_{15}ON$, from the action of bromine on lupanine hydrochloride (CALLSEN), A., i, 186.
- $C_9H_{15}N$, and $C_9H_{19}N$, from thujaketoneoxime (WALLACH), A., i, 45.
- $C_9H_{17}N$, from fenchocamphorone (WALLACH, NEUMANN, and v. WESTPHALEN), A., i, 241.
- $C_9H_{17}ON$, from pomegranate root (PICCININI), A., i, 110.
- $C_{10}H_6O_2N_6$, from 4-methylpyrimidine and nitric acid (GABRIEL and COLMAN), A., i, 56.
- $C_{12}H_{26}N_2$, from the reduction of leucinimide (COHN), A., i, 466.
- $C_{13}H_{13}O_2N$, by distilling decahydro-acridinedione (VORLÄNDER and KALKOW), A., i, 99.
- $C_{13}H_{15}N$, from $C_{14}H_{17}N$, from tetrahydrocarbazole (PLANCHER), A., i, 562.
- $C_{13}H_{21}ON$, from alcoholic potash and ethyl 2-methylcamphenepyrrole-3-carboxylate (DUDEN and TREFF), A., i, 673.
- $C_{20}H_{16}ON_3$, from the decomposition of $C_{32}H_{26}N_6(NO)_2$, formula of (SCHALL), A., i, 464.
- Wessel's, $C_{32}H_{28}N_6$, and its *d*-nitroso-derivative (SCHALL), A., i, 464.
- $C_{44}H_{41}O_2N$, by the action of alcoholic ammonia on the ethyl ester of the acid $C_{24}H_{21}O_4$ (COEN), A., i, 308.
- Bases**, formation of, from albumin (COHN), A., i, 466.
- from the reduction of camphoceenonitrile (BLAISE and BLANC), A., i, 184.
- from paramucosin (LEATHES), A., i, 318.
- from Californian petroleum (MABERY), A., i, 533.
- action of potassium permanganate on (WILLSTÄTTER), A., i, 404.
- aromatic, action of carbonyl chloride on (VITTENET), A., i, 153.
- See also Pseudo-bases.
- Basicity**, difference of, of the two amino-groups of substituted diamines (BÜLOW), A., i, 690.
- Basic slag**. See Slag, basic, and also Agricultural Chemistry.
- Bassia nut**. See Agricultural Chemistry.
- Bassorin** (HILGER and DREYFUS), A., i, 379.
- Bean oil** (KOSUTÁNY, WINDISCH, v. HÉRICHS-TÓTH, v. SZÉLL, and FALTIN), A., ii, 750.
- Beans**. See Agricultural Chemistry.
- Bdellium resin**, examination of (DIETERICH), A., ii, 118.
- Becquerel rays**. See Photochemistry.
- Bee**, queen, albumin in the cell of the (SÜSS; KLETT), A., ii, 93.
- Beer**, volatile acids in (SPAETH), A., ii, 177.
- detection of furfuraldehyde in (HEIM), A., ii, 327.
- detection of neutralising agents in (SPAETH), A., ii, 177.
- detection of "saccharin" in (RÖSSING), A., ii, 119.
- Beer disease**, a (VAN LAER), A., ii, 158.
- Beeswax**. See Wax.
- Beet molasses**. See Agricultural Chemistry.
- Beetroot**, estimation of sugar in (KOVÁŘ), A., ii, 694.
- See also Agricultural Chemistry.
- Benz-**. See also Benzoyl, and under the Parent Substance.
- Benzal-**. See Benzylidene-.
- Benzaldazine**, reduction of (CURTIUS), A., i, 611.
- Benzaldazines**, nitro- (CURTIUS and LUBLIN), A., i, 700.
- Benzaldehyde**, velocity of the reaction between sodium hydroxide and (POMERANZ), A., i, 552.
- oxidation of, in air (v. BAEYER and VILLIGER), A., i, 437.
- condensation of, with dibenzyl ketone (GOLDSCHMIEDT and KNÖFFER), A., i, 35.
- condensation of, with methyl or ethyl acetonedicarboxylate (PETRENKO-KRITSCHENKO and ELTCHANINOFF), A., i, 307.
- action of, on ethyl- β -naphthylamine (MORGAN), T., 1210; P., 1900, 171.
- action of dry silver oxide and ethyl iodide on (LANDER), T., 746.
- compounds of, with substances belonging to the sugar group (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- Benzaldehyde diacetate**, nitro- (THIELE and WINTER), A., i, 500.
- Benzaldehyde pyrrolylhydrazone** (PICCININI and SALMONI), A., i, 562.
- Benzaldoxime**, preparation of (SCHOLL), A., i, 144.
- oxidation of, by Caro's reagent (BAMBERGER), A., i, 500.
- benzylether, and its *p*-bromo-*p*-chloro-, and *p*-nitro-derivatives (SCHROETER and PESCHKES), A., i, 485.

- Benzaldoximes**, *anti*- and *syn*-, curves of the molecular vibrations of (HARTLEY and DOBBIE), T., 509; P., 1900, 58.
- Benzamide**, action of dry silver oxide and ethyl iodide on (LANDER), T., 736; P., 1900, 6.
hexachloride, preparation and properties of (MATTHEWS), T., 1275; P., 1900, 176.
- Benzamide**, 2:4:6-*tribromo*-, sodium salt of, and compound of, with sodium hydroxide (WHEELER), A., i, 492.
- Benzamidine**, condensation of, with the ethyl esters of acetylenedicarboxylic and chlorofumaric acids (RUHEMANN and STAPLETON), T., 809; P., 1900, 122.
 action of, on ethyl phenylpropionate (RUHEMANN and STAPLETON), T., 239; P., 1900, 11.
- Benzanilide** (SILBERRAD), T., 1191.
o-bromo- and -chloro-, nitrogen bromides and chlorides from (CHATTAWAY and ORTON), T., 800.
 3:5-*dibromo*-, and *o*-chloro- (CHATTAWAY and ORTON), A., i, 643.
- Benzaniline**. See Benzophenone, *p*-amino-.
- Benzdiazimide** (MEYER and ROHMER), A., i, 223.
- Benzene**, formation of, from acetylene (SABATIER and SENDERENS), A., i, 470, 471, 534.
 refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
 boiling-point of, with mixtures of acetone, carbon tetrachloride, chloroform, ether, and methyl alcohol (HAYWOOD), A., ii, 64.
 direct aldoxidation of (SCHOLL), A., i, 144.
 action of chlorine monoxide on (SCHOLL and NÖRR), A., i, 337.
 action of hydrogen peroxide on (CROSS, BEVAN, and HEIBERG), A., i, 534.
 derivatives, formation of tri-substituted from di-substituted (HOLLEMAN), A., i, 387.
 methyl derivatives, oxidation of, by means of acetic anhydride and sulphuric acid (THIELE and WINTER), A., i, 500.
 vapour and hydrogen, action of platinum- and of palladium-black on (LUNGE and AKUNOFF), A., i, 543.
 vapour, estimation of, in illuminating gas (PFEIFFER), A., ii, 173.
 detection of, in denatured spirit (HALPHEN), A., ii, 446.
- Benzene**, estimation of, in coal gas (HABER), A., i, 629.
- Benzene**, bromo-, rate of formation of (BRUNER), A., ii, 647.
 and *m*-xylene dibromide, action of sodium on a mixture of (PELLEGRIN), A., i, 151.
pentabromo- (JACOBSON and LOEB), A., i, 281.
 4-bromo-3-iodonitro- (WHEELER and VALENTINE), A., i, 26.
 1:4-*dibromo*-2:3-*dinitro*- ("α-*dibromo*-*dinitrobenzene*") (CALHANE and WHEELER), A., i, 146.
 chloro- and bromo-, electrolytic preparation of (VOTOČEK and ZENFŠEK), A., i, 19.
 chloro-, *tetrachloride*, preparation of (MATTHEWS), T., 1276; P., 1900, 176.
mono-, 1:2- and 1:4-*di*-, 1:2:4-*tri*- and 1:2:4:5-*tetra*-chloro-, action of bromine of (MOUNEYRAT and POURET), A., i, 19.
 1:2:4-*trichloro*-, and 2:4:5-*trichloro*-1-nitro- (COHN and FISCHER), A., i, 459.
 4-chloro-3-bromonitro- (WHEELER and VALENTINE), A., i, 26.
m-chloriodo- (KLAGES and LIECKE), A., i, 387.
o and *p*-chloronitro-, simultaneous formation of (HOLLEMAN and DE BRUYN), A., i, 638.
 chloro*dinitro*-, action of, on potassium benzoate and on acetamide (KYM), A., i, 158.
 nitro-, electrolysis of (LÖB), A., i, 697; ii, 706.
 electrolytic reduction of (HABER), A., i, 281; ii, 257; (HABER and SCHMIDT), A., i, 282.
 nitration of (HOLLEMAN), A., i, 387; (HOLLEMAN and DE BRUYN), A., i, 481.
 reduction of, with sodium (SCHMIDT), A., i, 20.
 conversion of, into *o*-nitrophenol (WOHL), A., i, 157.
o-, *m*-, and *p*-*dinitro*-, formation of (HOLLEMAN), A., i, 387; (HOLLEMAN and DE BRUYN), A., i, 481.
trinitro-, compounds of, with sodium alkyl oxides and with ethyl sodio-acetoacetate or sodiomalonate (JACKSON and GAZZOLO), A., i, 433.
 nitroso-, action of aqueous sodium hydroxide on (BAMBERGER), A., i, 531.
- Benzeneazimonomol**. See 1-Hydroxy-1:2:3-benzotriazole.

- Benzenazobenzoylacetone**, *p*-nitro-, and its methylimide and phenylimide, and its condensation products with phenylhydrazine and reactions with semicarbazide sulphate, hydroxylamine and hydrochloric acid (BÜLOW), A., i, 65, 66.
- Benzenazo-*o*-dibromophenol**, its acyl derivatives and ethyl ether (HEWITT and ASTON), T., 712; P., 1900, 89.
p-bromo-, and its acyl derivatives and ethyl ether (HEWITT and ASTON), T., 810; P., 1900, 131.
- Benzenazo-4-chloro-*m*-phenylenediamine** (COHN and FISCHER), A., i, 458.
- Benzenazodiacetylsuccinic acid**, diethyl ester of, isopyrazole derivatives from (BÜLOW and SCHLESINGER), A., i, 56.
- Benzenazodiphenylamine oxide**, and *p*-bromo- (BAMBERGER and STIEGELMANN), A., i, 193.
- Benzenazoethyl-*β*-naphthylamine**, *p*-nitro- (MORGAN), T., 1214.
- 3-Benzenazo-6-hydroxybenzylideneacetophenone** (BORSCHKE), A., i, 419.
- Benzenazomethylaniline oxide**, and *p*-bromo- (BAMBERGER and STIEGELMANN), A., i, 193.
- Benzenazo-*β*-naphthol** (MÖHLAU and STROHBACH), A., i, 368.
- Benzenazo-*β*-naphthylcarbamic acid**, ethyl ester (BUSCH and HARTMANN), A., i, 60.
- Benzenazo-*o*-nitrophenol**, preparation, properties, and reactions of, and its acetyl and benzoyl derivatives (HEWITT), T., 99; P., 1899, 229.
- Benzenazonitrosobenzene** (WERNER and STIASNY), A., i, 194.
- Benzenazophenol**, bromination of (HEWITT and ASTON), T., 712, 810; P., 1900, 89, 131.
 nitration of (HEWITT), T., 99; P., 1899, 229.
- Benzenazophenol**, *p*-nitro- and its acetyl and benzoyl derivatives, and *p*-amino-, and its acetyl derivatives (MELDOLA and WILLIAMS), P., 1899, 196.
- Benzenazosalicylaldehyde** and the action of acetophenone on (BORSCHKE), A., i, 419.
- Benzenecyanonitric acid**, *d*-nitro- (trinitrobenzene cyanhydrin) (HANTZSCH and KISSEL), A., i, 90.
- Benzene-6-diazoaminoquinoline** (KNUFFEL), A., i, 188.
- Benzenediazocyanide** and its bromine derivatives and their dissociation to diazonium cyanides (HANTZSCH), A., i, 568.
- Benzenediazonium**. See Diazonium.
- Benzenediazonium-*o*-sulphonic acid** (*di-azobenzene-*o*-sulphonic acid*), *p*-bromo-, and *syn*-diazotates from (GERILOWSKI), A., i, 706.
- Benzene-mono- and tri-dimetaphosphoric acids** (GIRAN), A., i, 146.
- Benzene-*o*-disulphonic acid** and its salts derivatives (ARMSTRONG and NAPPER), P., 1900, 160.
- Benzene potassium cyanide**, trinitro- (HANTZSCH and KISSEL), A., i, 90.
- Benzene ring**, gradual synthesis of the (DELAURE), A., i, 603.
 law governing the elimination of halogens from the (KLAGES and LIECKE), A., i, 387.
- Benzenestearosulphonic acid**. See Sulphophenylstearic acid.
- r*-*α*-Benzenesulphaminobutyric acid** (FISCHER and MOUNEYRAT), A., i, 647.
- Benzenesulphocamphenamide** (DUDEN and MACINTYRE), A., i, 302.
- Benzenesulphonamides** of primary bases (DUDEN), A., i, 282; (WILLSTÄTTER and LESSING), A., i, 304.
- Benzenesulphone- and Benzenesulphone-methyl-*o*-anisidine** (DIEPOLDER), A., i, 191.
- Benzenesulphonic acid**, aromatic esters of, and compounds of, with aminophenols and acids (GEORGESCU), A., i, 343.
- 1:2:3:4-Benzenetetracarboxylic acid** (*prehnitic acid*) (DOEBNER), A., i, 500.
- Benzenoid hydrocarbons**, refractive and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
 action of cyanogen bromide and aluminium chloride on (SCHOLL and NÖRR), A., i, 386.
- Benzenyl-*o*-aminophenol**, *m*-nitro- (RANSON), A., i, 218.
- Benzenylanilinoxime**, its nitro-derivatives, and *d*-nitrophenyl ethers (WERNER and HERBERGER), A., i, 58.
- Benzenylmethyliminochloride**, decomposition of (V. PECHMANN and OBERMILLER), A., i, 294.
- pp*-Benzhydropdicarboxylic acid** (LIMPRICHT), A., i, 599.
- Benzhydroxamic acid** from the oxidation of benzaldoxime (BAMBERGER), A., i, 500.
 its acetyl, benzoyl, and chloro-derivatives (VAN RAAUTE), A., i, 147.
- Benzidine**, electrolytic preparation of (LÖB), A., i, 697; ii, 706.
 colour test for (WOLFF), A., ii, 119.
- "Benzidine, cyano-"** platinumchloride (MEVES), A., i, 484.
- Benzil**, action of ethyl mercaptan on (LLAGUET), A., i, 503.

- β -Benzildioxime**, double compounds of, with certain solvents (PETRENKO-KRITSCHENKO and KASANEZKY), A., i, 350.
- Benzimino-ethers**, rearrangement of (WHEELER), A., i, 293; (WISLICENUS and GOLDSCHMIDT), A., i, 435.
- Benzoic acid**, electrical conductivity of, influence of substituents on (TINGLE), A., ii, 6.
oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.
mercury derivative of (PESCI), A., i, 546.
potassium salt, action of chlorodinitrobenzene on (KYM), A., i, 158.
hexachloride, preparation of (MATTHEWS), T., 1276; P., 1900, 176.
- Benzoic acid**, *p*-acetylaminobenzoylmethyl, acetylaminoo-tolylmethyl, and *p*-amino-*m*-dimethylbenzoylmethyl esters (KUNCKELL), A., i, 663.
o-benzylaminophenyl and *o*-benzoylmethylaminophenyl esters of, and their nitro-derivatives (RANSOM), A., i, 219.
phenyl, *p*-tolyl, and thymyl esters, formation of (BODROUX), A., i, 224.
- Benzoic acid**, *o*-amino-. See Anthranilic acid.
m- and *p*-amino-, glycyl derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 493.
p-amino-, action of ethyl acetoacetate and substituted acetoacetates on, in presence and absence of pyridine (TROEGER), A., i, 226.
diaminocyno-, quinoneimide of (NIETZKI and PETRI), A., i, 486.
2:3:4:6-tetramino-5-cyano- (NIETZKI and PETRI), A., i, 486.
m-chloro-, nitration of (HOLLEMAN and DE BRUYN), A., i, 638.
o-, *m*-, and *p*-chloro-, and their derivatives, nitration of (HOLLEMAN), A., i, 388; (MONTAGNE), A., i, 491.
methylanilides of (MONTAGNE), A., i, 491.
iodoso- (m. p. 228°) (VANINO and UHLFELDER), A., i, 371.
m-nitro-, ethyl ester, chloro- and bromo-imide of (STIEGLITZ and SLOSSON), P., 1900, 2.
o-, *m*-, and *p*-nitro-, formation and nitration of (HOLLEMAN), A., i, 387.
thio- and nitrothio-, and their *d*-nitrophenyl esters (KYM), A., i, 190.
- Benzoic chloride**, action of, on *s*-3:6-dimethyldihydrotetrazine (SILBERRAD), T., 1185; P., 1900, 169.
- Benzoic chloride**, additive compound of, with aluminium chloride (KRONBERG), A., i, 502.
- Benzoic chloride**, 2:5-, 3:4-, and 4:3-chloronitro-, methylamides of (MONTAGNE), A., i, 491.
- Benzoic hydrogen peroxide** (v. BAeyer and VILLIGER), A., i, 328, 437.
- Benzoic peroxides**, bromo-, iodo- and nitro- (VANINO and UHLFELDER), A., i, 371.
- o*-Benzoicsulphinide**. See "Saccharin."
- Benzoïn**, action of ethyl mercaptan on (LLAGUET), A., i, 503.
action of dry silver oxide and alkyl iodides on (LANDER), T., 733; P., 1900, 6, 90.
- Benzoïn- β -phenylhydrazone**, action of benzoic chloride on (FREER), A., i, 124.
- Benzonitrile**, specific heat and heat of vaporisation of (LUGININ), A., ii, 334.
hydrolysis of (RABAUT), A., i, 170.
- Benzonitrile hexachloride**, preparation and properties of (MATTHEWS), T., 1273; P., 1900, 175.
- Benzonitroic acid**, *d*-nitro-, barium salt (HANTZSCH and KISSEL), A., i, 90.
- Benzophenone**, allotropy of (OECHSNER DE CONINCK), A., i, 236.
solubility of (DERRIEN), A., i, 299.
additive compound of, with aluminium chloride (KRONBERG), A., i, 502.
new derivative of (OECHSNER DE CONINCK and DERRIEN), A., i, 502.
- Benzophenone**, *p*-amino- (*benzaniline*) derivatives of (DINGLINGER), A., i, 503.
- Benzophenone-2:4'-dicarboxylic acid** (LIMPRICHT), A., i, 32.
- Benzophenone-4:4'-dicarboxylic acid** (LIMPRICHT), A., i, 598.
- Benzophenone diethyl, diphenyl, and ditolyl diketones** (LIMPRICHT), A., i, 32.
- Benzophenonediphenyldiketonedicarboxylic acid** (LIMPRICHT), A., i, 32.
- Benzophenonephenylacetylene** (NEF), A., i, 21.
- Benzopyrines**, metallic (SCHUYTEN), A., i, 57.
- Benzo- γ -pyrone** and its carboxylic acid (RUHEMANN and STAPLETON), T., 1180; P., 1900, 168.
- p*-Benzoxymesityl bromide and ethyl ether**, dibromo- (AUWERS, TRAUN, and WELDE), A., i, 169.
- Benzoyl**-. See also under Parent Substance.
- Benzoylacetetic acid** (RUHEMANN and STAPLETON), T., 1180; P., 1900, 168.

- Benzoylacetone**, *dithio*-, action of hydroxylamine and phenylhydrazine on (VAILLANT), A., i, 239.
- Benzoylconitic acid**, ethyl ester of (RUHEMANN and STAPLETON), T., 804; P., 1900, 121.
- Benzoyl- α -aminobutyric acids**, *d*-, *l*-, and *rac*- (FISCHER and MOUNEYRAT), A., i, 647.
- α -Benzoylaminocinnamic anhydride**, action of amines on (ERLENMEYER), A., i, 549.
- α -Benzoylaminocinnamide** (ERLENMEYER), A., i, 549.
- Benzoylaminodiphenylguanidine** (BUSCH and BAUER), A., i, 415.
- o*-Benzoylaminophenol** and its *o*-methyl-compound and their benzoates and nitro-derivatives (RANSOM), A., i, 218.
- Benzoylaminosulphonol** (POSNER and FAHRENHORST), A., i, 16.
- p*-Benzoylanilinocinnamylformic acid**, *p*-benzanilide of (DINGLINGER), A., i, 503.
- Benzoylanisoylmethane** (POND, MAXWELL, and NORMAN), A., i, 102.
- Benzoylanthranilic acid** (PSCHORR and WOLFES), A., i, 170.
- Benzoyl- γ -aspartic acid** and its salts (SCHULTZE), A., i, 596.
- Benzoylation** in presence of pyridine (MINUNNI), A., i, 214.
- o*-Benzoylbenzenesulphonic acid**, *p*-nitro-, and its salts and chloride (HOLLIS), A., i, 292.
- Benzoylbenzhydrol** (NEF), A., i, 21.
- Benzoylbenzoinoethyl ether**, action of ethyl iodide on (WHEELER), A., i, 294.
- o*-Benzoylbenzoic acid**, tautomerism of (HALLER and GUYOT), A., i, 170.
- 3:6-dichloro- and tetrachloro-, esterification of (GRAEBE), A., i, 548.
- Benzoylbenzylidenehydrazide** (MINUNNI and CARTA-SATTA), A., i, 252; (CURTIUS), A., i, 701.
- Benzoylisobutylamide** (WHEELER), A., i, 293.
- Benzoyl-carbamides** and ψ -carbamides, formation of (WHEELER and JOHNSON), A., i, 632.
- Benzoylcarbaminothioglycollic acid** (WHEELER and JOHNSON), A., i, 633.
- Benzoylcarbinol**, *p*-amino-, and its hydrochloride and phenylhydrazone (KUNCKELL), A., i, 663.
- Benzoylcarbonyl- α -aminophenol** and *m*-nitro- (RANSOM), A., i, 218.
- Benzoyl-*s*-dibenzyl-*i*-diphenylethylenediamine** ("dibenzylamarine") (JAPP and MOIR), T., 608; P., 1899, 211.
- Benzoyl-*s*-dimethyl- and -*s*-diethyl-*i*-diphenylethylenediamine** ("dimethyl-" and "diethyl-amarine") (JAPP and MOIR), T., 608; P., 1899, 211.
- Benzoylfurfurylidenehydrazide** (MINUNNI and CARTA-SATTA), A., i, 252.
- Benzoylglutamic acid** and its salts (SCHULTZE), A., i, 596.
- 3-Benzoyl-4-hydroxyisocarbostyryl** (GABRIEL and COLMAN), A., i, 689.
- Benzoyliminothiocarbonic acid**, esters, formation of (WHEELER and JOHNSON), A., i, 634.
- Benzoylleucine** and its salts (SCHULTZE), A., i, 595.
- Benzoyl- γ -leucine**, resolution of, into its active components (FISCHER), A., i, 646.
- o*-Benzoylmethylamino-phenol** and **-phenyl ethyl carbonate** (RANSOM), A., i, 219.
- β -Benzoyl- α -methylpropionic acid** (*phenylmethylbutanonoic acid*), synthesis of (KLOBB), A., i, 497.
- 4-Benzoylnicotinic acid** (FULDA), A., i, 53.
- Benzoylphenetidinesulphonic acid** (COHN), A., i, 29.
- Benzoylphenylacetylene** and its diiodide (NEF), A., i, 21.
- action of potash on (MOUREU and DELANGE), A., i, 397.
- Benzoyl-*d*-phenylalanine** (FISCHER and MOUNEYRAT), A., i, 647.
- p*-Benzoylphenyl-carbimide**, and **-methylurethane** (DINGLINGER), A., i, 503.
- $\alpha\alpha$ -Benzoylphenylhydrazide**, action of heat on (SILBERRAD), T., 1190; P., 1900, 169.
- α -Benzoylphenylhydrazide**/**trichloroquinone** (McPHERSON and FISCHER), A., i, 411.
- s*-Benzoylphenylhydrazine-*p*-sulphonic acid** (FICHTER and SCHIESS), A., i, 366.
- p*-Benzoylphenyloxamic acid**, ethyl ester (DINGLINGER), A., i, 503.
- p*-Benzoylphenylsuccinimide** (DINGLINGER), A., i, 503.
- p*-Benzoylphenylthio-carbamide** and **-carbimide** (DINGLINGER), A., i, 503.
- p*-Benzoylphenylurethane** (DINGLINGER), A., i, 503.
- β -Benzoylpropionic acid** (DRBOGLAFF), A., i, 490.
- Benzoyl-2:4:6:4'-tetramethoxyacetophenone** (CZAJKOWSKI, v. KOSTANECKI, and TAMBOR), A., i, 504.
- Benzoylthiamide**, *p*-bromo- (SAULMANN), A., i, 687.

- Benzoylthiocarbimide**, reactions of, with imino-ethers (WHEELER and SANDERS), A., i, 563.
- Benzoyl-*r*-tyrosine**, resolution of, into its optically active components (FISCHER), A., i, 172.
- Benzoylusnic acid** and its oxime (PATERNO), A., i, 662.
- Benzyl alcohol**, action of methylene sulphate on (DELÉPINE), A., i, 163. *m*-nitro-*p*-amino- and its anhydro-derivative (MEYER and ROHMER), A., i, 222.
- Benzyl chloride**, *p*-cyano-, reactions of (MOSES), A., i, 658. cyanide. See Phenylacetonitrile. hydrogen sulphate (DELÉPINE), A., i, 164. iodide, *p*-chloro- (VAN RAALTE), A., i, 147. nitrate (NEF), A., i, 5. thiocyanate, *p*-cyano-, reactions of (MOSES), A., i, 658.
- β -Benzylallylamine** and its salts (POSNER and FAHRENHORST), A., i, 18.
- Benzylaminocarboxylic acid**. See Phenylacetic acid, amino-.
- Benzylaminochloroindone** (LANSER and WIEDERMANN), A., i, 667.
- 3-Benzylamino-1-indone** (SCHLOSSBERG), A., i, 665.
- Benzylisoamylamine** (EINHORN and PFEIFFER), A., i, 222.
- Benzylaniline**, *o*-chloro-, and its nitroso-derivative (BAMBERGER and MÜLLER), A., i, 706.
- Benzylanilinesulphonic acids** (SMEDLEY), P., 1900, 160.
- Benzylazoimide** (WOHL and OESTERLIN), A., i, 698; (CURTIUS), A., i, 699.
- Benzylbenzenylaminoxime** and its 2:4-dinitrophenyl ether (WERNER and HERBERGER), A., i, 59.
- Benzylbenzylidenehydrazine** and its acetyl derivative (WOHL and OESTERLIN), A., i, 698. and its salts (CURTIUS), A., i, 611.
- Benzylbutylamines** (EINHORN and PFEIFFER), A., i, 222.
- Benzylcamphor**, bromo- (HALLER and MINGUIN), A., i, 452.
- Benzylcarbinol** (β -phenylethyl alcohol) from German oil of roses (v. SODEN and ROJAHN), A., i, 489. in rose blossoms (WALBAUM), A., i, 509, 645.
- Benzylchloroformoxime** (BIDDLE), A., i, 137.
- Benzylidiguamide** (BEUTEL), A., i, 367.
- Benzylidimethylcarbinol** (GRIGNARD), A., i, 382.
- Benzylethylthetine** platinichloride (STRÖMHOLM), A., i, 326.
- Benzylformhydroxamic acid** (BIDDLE), A., i, 137.
- Benzylhydrazine** and its hydrochloride and nitroso-derivative (WOHL and OESTERLIN; CURTIUS), A., i, 698. synthesis of, and its dibenzoyl derivative (CURTIUS), A., i, 610. reduction of benzylidenehydrazine to (CURTIUS), A., i, 700.
- Benzyl-*o*-hydroxybenzylidenehydrazine** (CURTIUS), A., i, 611.
- α -Benzylhydroxylamine** and action of ethyl formate on (SCHROETER and PESCHKES), A., i, 485.
- Benzylideneacetoxime**, oxidation of (HARRIES), A., i, 504.
- Benzylideneaminodiphenylguanidine** (BUSCH and BAUER), A., i, 414.
- Benzylideneaminodi-*o*- and -*p*-tolyl-guanidines** (BUSCH and BAUER), A., i, 415.
- Benzylideneaniline**, *o*-chloro- (BAMBERGER and MÜLLER), A., i, 706.
- Benzylideneazine**, formation of (YOUNG and WITHAM), P., 1900, 73. *m*- and *p*-nitro- (MINUNNI and CARTASATTA), A., i, 251.
- Benzylidenebisacetonedicarboxylic acid**, methyl ester (PETRENKO-KRITSCHENKO and ELTCHANINOFF), A., i, 307.
- Benzylidenebisacetylacetones**, six isomeric, preparation and configuration of (SCHIFF), A., i, 39.
- Benzylidenebisdihydroresorcinol**, and **Benzylidenebis-dimethyl- and -phenyldihydroresorcinol** (VORLÄNDER and STRAUSS), A., i, 100.
- Benzylidenebis-gallacetophenone** and **-resacetophenone** and its ethyl ether, and their acetyl derivatives (BLUMSTEIN and v. KOSTANECKI), A., i, 448.
- Benzylidenebis-2-methylindole** (v. WALTHER and CLEMEN), A., i, 408.
- Benzylidenecampholic acid** (HALLER and MINGUIN), A., i, 452.
- Benzylidenecamphor**, action of hydrogen bromide on (HALLER and MINGUIN), A., i, 452.
- r*-Benzylidenecamphor**, resolution of; isomorphism of the active components (MINGUIN), A., i, 301.
- Benzylidenedihydroisocamphor** (RIMINI), A., i, 554.
- Benzylidenefluorene** (*phenyldiphenylene-ethylene*) (THIELE), A., i, 347.
- Benzylidenehydantoin** and **Benzyliden-imino- and -thio-hydantoin** (RUHMANN and STAPLETON), T., 241; P., 1900, 12.

- Benzylidenehydrazine**, reduction of, to benzylhydrazine (CURTIUS), A., i, 700.
- o*-, *m*-, and *p*-nitro-, and their reactions (CURTIUS and LUBLIN), A., i, 700.
- Benzylidene-2-lepidyl- and -4-quin-aldyl-hydrazine** (MARCKWALD and CHAIN), A., i, 521.
- Benzylidene-2-naphthylamine**, 1-bromo- and 1-chloro-, and their hydrocyanides and *o*- and *p*-nitro-derivatives (MORGAN), T., 1216; P., 1900, 171.
- Benzylideneneobornylamine** (FORSTER and HART-SMITH), T., 1157; P., 1900, 166.
- "**Benzylidenephenyldihydroresorcinol**." See Triphenyloctohydroxanthenedione.
- Benzylidenephenylhydrazone** (MORGAN), T., 1210.
- Benzylidene-mono- and -di-quin-aldine and -lepidine** (KOENIGS), A., i, 189.
- Benzylidene-2-quinolyldiazine** and its salts (MARCKWALD and MEYER), A., i, 519.
- Benzylidenesemicarbazone**, oxidation of (YOUNG and WITHAM), T., 226; P., 1900, 5.
- 1-Benzylindene** (MARCKWALD), A., i, 434.
- Benzylisoretine** (BIDDLE), A., i, 137.
- Benzylmethylollepiline** (KOENIGS), A., i, 189.
- Benzyl-mono- and -di-methylolquin-aldine** (KOENIGS), A., i, 189.
- Benzylmethylsulphine iodide** and **Benzylmethylisopropylsulphine platinichloride** (STRÖMHOLM), A., i, 326.
- Benzyl- α -naphthaquinone**, 2-chloro-3- α -cyano- (MICHEL), A., i, 669.
- Benzylloximinofornyl ethyl, acetyl, and benzoyl oxides, and Benzylloximino-diacetyl oxide** (BIDDLE), A., i, 138.
- Benzylloxycarbamide**, *p*-bromo- and *p*-chloro- (SCHROETER and PESCHKES), A., i, 485.
- Benzylphenylnitrosoamine**, *p*-nitro- (BAMBERGER and MÜLLER), A., i, 706.
- Benzylquinaldine**, compound of, with chloral (KOENIGS), A., i, 189.
- Benzylisoquinolines**, 4-, 3-, and 1- (RÜGHEIMER), A., i, 522.
- Benzylsemicarbazide** (CURTIUS), A., i, 611.
- Benzylsulphide-*p*-dicarboxylic acid** and its nitrile (MOSES), A., i, 658.
- β -Benzylsulphoneallylphthalamic acid** (POSNER and FAHRENHORST), A., i, 18.
- Benzylthiocarbimide**, action of, on *Saccharomyces mycoderma* (TER MEULEN), A., i, 511.
- Berberine phosphate**, composition of (SHEDDEN), A., i, 683.
- estimation of (TROEGER and LINDE), A., i, 515.
- Bergamot oil** (CHARABOT), A., ii, 101; (SOLDAINI and BERTÉ), A., ii, 173.
- Beryllium ammonium phosphate**, estimation of beryllium in (AUSTIN), A., ii, 49.
- separation of, from iron (HAVENS and WAY), A., ii, 50.
- Beudantite** (HARTLEY), A., ii, 601; (PRIOR), A., ii, 602.
- Bile**, human (v. ZEYNEK), A., ii, 29.
- as a digestive juice (BRUNO), A., ii, 553.
- as a solvent (MOORE), A., ii, 291.
- Bile pigments**, detection of, in urine (HAMMARSTEN), A., ii, 637.
- Bilirubin**, detection of, in urine (ARNOLD), A., ii, 114.
- Binnite**, identity of, with tennantite (PRIOR and SPENCER), A., ii, 21.
- Biological chemistry**, ethical and scientific questions of (THUDICHUM), A., ii, 609.
- Biotite** (?) from Japan (JIMBŌ), A., ii, 87.
- Birds**, digestion in (PAIRA-MALL), A., ii, 553.
- Bis- β -diamyldisulphonepropylthiocarbamide** (POSNER and FAHRENHORST), A., i, 17.
- Bisdiazoacetic acid** (HANTZSCH and SILBERRAD), A., i, 261.
- Bisdiazobenzenephenyltetrazone** and its halogen derivatives (WOHL and SCHIFF), A., i, 707.
- Bisdiazobenzene-*p*-tolyltetrazone** (WOHL and SCHIFF), A., i, 708.
- Bisdiazotetrazones** (*octazonones*), formation of (WOHL and SCHIFF), A., i, 706.
- Bis-*p*-diazotoluenephenyltetrazone** (WOHL and SCHIFF), A., i, 707.
- Bisdiazomethane**. See Dihydratotetrazine.
- Bis- β -diethylsulphonepropylthiocarbamide** (POSNER and FAHRENHORST), A., i, 16.
- Bismuth alloys** with sodium, composition and melting point of (KURNAKOFF), A., ii, 277.
- Bismuth salts**, action of sodium thiosulphate on (FAKTOR), A., ii, 692.
- Bismuth chloride**, double salts of, with organic bases (HAUSER and VANINO), A., i, 641.
- oxybromide, oxychloride, and oxyiodide (DE SCHULTEN), A., ii, 353.
- suboxide and subsulphide (SCHNEIDER), A., ii, 212.

- Bismuth**, trioxide, action of, on sulphur chloride (ODDO and SERRA), A., ii, 74.
 peroxide, action of hydrogen sulphide on (VANINO and HAUSER), A., ii, 279.
 sulphates (ADIE), P., 1899, 226.
- Bismuth organic compounds**:—
 compounds of, with phenols (RICHARD), A., i, 593.
 cobaltcyanide (MILLER and MATHEWS), A., ii, 318; (MATHEWS), A., ii, 578.
- Bismuth, estimation and separation of**:—
 estimation of, electrolytically (BALACHOWSKI), A., ii, 578.
 separation of, from lead (CLARK), A., ii, 371.
- Bisnitrosocyclohexanonecarboxylic acid**, diethyl ester (DIECKMANN), A., i, 297.
- Bisnitrosocyclopentanonecarboxylic acid**, diethyl ester (DIECKMANN), A., i, 297.
- p*-**Bis-1-phenyl-3-methylpyrazoloneazobenzene** (BÜLOW), A., i, 261.
- Bis-isopropylazimethylene**. See *iso*-Butaldazine.
- Bispulegone** (HARRIES and ROEDER), A., i, 183.
- Bitumen** from Bohemia (EICHLEITER), A., ii, 354.
- Bitumens**, estimation of sulphur in (S. F. and H. E. PECKHAM), A., ii, 44; (LANGMUIR), A., ii, 310.
- Bleaching powder**, estimation of chlorine in (WOŁOWSKI), A., ii, 165.
- Blood**, electrical conductivity of (OKER-BLOM), A., ii, 290, 356, 607.
 specific heat of (BORDIER; BERTHELOT), A., ii, 356.
 relationship of constants of the (JELINEK and SCHIFFER), A., ii, 152.
 changes in the composition of, after transfusion of sodium chloride, and their relationship to diuresis (MAGNUS), A., ii, 665.
 chemical changes in, from feeding with ammonium sulphate (RUMFF and SCHUMM), A., ii, 417.
 influence of the concentration of, on the tension of carbon dioxide in it (GRANDIS), A., ii, 604.
 influence of moisture on the passage of carbon dioxide from, to the air (GRANDIS), A., ii, 604.
 colouring matter of (NENCKI and ZALESKI), A., i, 709.
 changes in the ether-soluble substances in the (WEIGERT), A., ii, 738.
 hydroxyl-ions of the (HÜBER), A., ii, 738.
- Blood**, iodine in the (GLEY and BOURCET), A., ii, 555.
 oxygen in human (LOEWY), A., ii, 357.
 oxygen capacity and volume of, in man (HALDANE and SMITH), A., ii, 416, 665.
 volume and oxygen capacity of, in chlorosis and pernicious anæmia (SMITH), A., ii, 416.
 the ferricyanide method of determining the oxygen capacity of (HALDANE), A., ii, 458.
 oxyhæmoglobin crystals from pigeons' (SCHWANTKE), A., i, 711.
 proteins of, action of lymphagogues on (TIMOFEEFFSKY), A., ii, 95.
 action of antileucocytic serum on the (DELEZENNE), A., ii, 423, 554.
 of mother and fœtus, effect of ingested alcohol on the (NICLOUX), A., ii, 416.
 detection of (STRZYZOWSKI), A., ii, 123.
 detection of carbon monoxide in (IPSEN; WACHHOLZ), A., ii, 169.
 estimation of alcohol in, in acute alcoholism (GRÉHANT), A., ii, 95, 112.
 simultaneous estimation of two colouring matters in (HÜFNER), A., ii, 459.
 apparatus for the clinical estimation of phosphorus in (JOLLES), A., ii, 311.
 estimation of the reducing power of (ROSIN), A., ii, 319.
 estimation of uric acid and purine bases in (HIS and HAGEN), A., ii, 769.
- Blood corpuscles**, influence of, on the electrical conductivity of blood (OKER-BLOM), A., ii, 290, 356, 607.
 agglutination of, by chemical agents (HÉDON), A., ii, 665.
 red, and hæmolytic serum (CANTACUZÈNE), A., ii, 741.
 of animals, sodium and potassium in the (BORTAZZI and CAPPELLI), A., ii, 225.
- Blood-formation**, relationship of iron to (ABDERHALDEN), A., ii, 223, 289, 416; (HOFMANN), A., ii, 491.
- Blood-gases**, action of the, on respiration (PLAVEC), A., ii, 288.
- Blood molasses**. See *Agricultural Chemistry*.
- Blood-pressure**, influence of minimal doses of suprarenal extracts on (MOORE and PURINTON), A., ii, 737.
- Blood-serum**, the anti-remmin of, in pathological conditions (ACHARD and CLERC), A., ii, 557.

Bocconia cordata, alkaloids of (MURRILL and SCHLOTTERBECK), A., i, 686.

Body, temperature of the, during fasting, and the speed of assimilation of carbohydrates, proteids, and fats (MOSSO), A., ii, 605.

Boiler water, influence of temperature and concentration on the saline constituents of (CRIBB), A., ii, 542.

Boiling point, relation between the melting point and, in hydrocarbons (BAYLEY), A., i, 369.
of mixtures of chloral and water (CHRISTENSEN), A., i, 626.
constant, of liquid mixtures (RYLAND), A., ii, 64.
increase in, of dilute solutions (SMITS), A., ii, 708.
of various substances (LADENBURG and KRÜGEL), A., ii, 258.

Boiling point apparatus (JONES), A., ii, 187; (BATELLI and STEFANINI), A., ii, 709.
Beckmann's, simplification of (BIGELOW), A., ii, 9.
for securing steady pressure during determinations (SMITS), A., ii, 388.

Boiling point curves of liquid mixtures (HAYWOOD), A., ii, 64; (SPEYERS), A., ii, 464.

Bone, mucin from (GIES), A., i, 317.

Bone meal. See Agricultural Chemistry.

Boragineæ, poisonous alkaloids of the (GREIMER), A., i, 683.

Borax. See Sodium baborate.

Borneol and *iso*Borneol, action of zinc dust on (SEMMLER), A., i, 351.

Borneols, sodium, action of aromatic aldehydes on (HALLER), A., i, 301.

Borneol, β -amino-, and its salts (DUDEN and MACINTYRE), A., i, 674.

Bornyl chloride and **iodide**, relation of, to pinene hydrochloride and hydriodide (WAGNER and BRICKNER), A., i, 46.

Bornylamine salts, and their molecular rotation (FORSER and HART-SMITH), T., 1152; P., 1900, 166.

Bornylene (WAGNER and BRICKNER), A., i, 554.

β -Bornylhydroxylamine (1-hydroxyl-aminocamphane) (FORSTER), T., 255; P., 1900, 14.

Bornylloxamide (FORSTER and HART-SMITH), T., 1155; P., 1900, 166.

Boron, atomic weight of (GAUTIER), A., ii, 14, 15; (HINRICHS), A., ii, 534, 539.

Boric acid, dissociation constant of (WALKER and CORMACK), T., 16; P., 1899, 208.
as a food preservative (RIDEAL and FOULERTON), A., ii, 560; (HEHNER), A., ii, 561.

VOL. LXXVIII. ii.

Boron :—

Boric acid, esters of (WOHL and NEUBERG), A., i, 131.
qualitative test for (E. M. and M. L. WADE), A., ii, 758.
detection of, in borates (BORN-TRÄGER), A., ii, 439.
estimation of (JONES), A., ii, 47; (STOCK), A., ii, 312; (FISCHER), A., ii, 367; (WOLFF), A., ii, 435; (MORSE and HORN), A., ii, 626.
estimation of, in preserved meat and separation of, from borax (BEYTHIEN and HEMPEL), A., ii, 313.
estimation of, in tourmaline (SARGENT), A., ii, 47.

Borates, metallic (OUVRARD), A., ii, 206, 207.

Hyperborates, fluoro- (MELIKOFF and LORDKIPANIDZE), A., ii, 138, 139.

Brain, chemistry of the (BARBIERI), A., ii, 671.

Brandy, estimation of alcohols in (ADAM), A., ii, 53.

Brass, electrolytic deposition of (MORGAN), A., ii, 345.

Brazilein, constitution of (v. KOSTANECKI and FEUERSTEIN), A., i, 355.

Brazilin (GILBODY and PERKIN), P., 1899, 241.
constitution of (GILBODY, PERKIN, and YATES), P., 1900, 107; (v. KOSTANECKI and FEUERSTEIN), A., i, 355.
as a photographic developer (LEPETIT), A., ii, 519.

Bread-making, relation of the constituents of flour to (GUESS), A., ii, 584.

Breads, white and whole-meal, composition of, and digestion experiments with (ROSENHEIM and SCHIDROWITZ), A., ii, 289.

Brewery residues. See Agricultural Chemistry.

"Brilliant fast red G," synthesis of (KÖHNER), A., i, 455.

Britholite from Greenland (WINTHER), A., ii, 413.

Bromal, compounds of, with formaldehyde (PINNEN), A., i, 427.

Bromination by means of aluminium bromide (POURER), A., i, 369.

Bromine, spectrum of (EDER and VALENTA), A., ii, 330.
vapour density of, at high temperatures (PERMAN and ATKINSON), A., ii, 398.
action of, on phenol and cresols (DITZ and CEDIVODA), A., ii, 54.
physiological action of (FESSEL), A., ii, 227.

- Bromine compounds**, effect of very low temperatures on the colour of (KASTLE), A., ii, 526.
- Hydrobromic acid** (*hydrogen bromide*), preparation of pure (SCOTT), T., 648; P., 1900, 69.
- influence of, on the bromination of trimethylene (GUSTAVSON), A., i, 535.
- Bromates and hypobromites**, formation of, by the electrolysis of the bromides of the alkaline earth metals (SARGHEL), A., ii, 400.
- Hypobromous acid**, action of, on anilides (CHATTAWAY and ORTON), T., 789, 797; P., 1900, 102, 112; (CHATTAWAY, ORTON, and HURTLEY), A., i, 152; (ARMSTRONG), T., 1047; P., 1900, 160.
- action of, on diacetyl-*m*-phenylenediamine (MORGAN), T., 1203; P., 1900, 170.
- action of, on unsaturated acids (MELIKOFF), A., i, 536.
- Bromine, estimation and separation of**—
- estimation of, in presence of chlorine and iodine (V. WESZELSZKY), A., ii, 436.
- separation of, from chlorine and iodine (CROTOGINO), A., ii, 642.
- Bromoform**, action of, on dimethylpyrrolines (BOCCHI), A., i, 357.
- compound of, with aluminium bromide and carbon disulphide (KONOWALOFF and PLOTNIKOFF), A., i, 323.
- Bronzes** from Ephesus, composition of (NATTERER), A., ii, 480.
- analysis of (FOMIN), A., ii, 109.
- Bullocks**. See Agricultural Chemistry.
- Burette** for gas analysis (WHITE), A., ii, 571.
- Burettes**, use of floats in (KREITLING), A., ii, 685.
- iso***Butaldazine** (*bis*isopropylazimethylene), transformation of, into 4:4-dimethyl-5-isopropylpyrazoline (FRANKE), A., i, 212.
- iso***Butaldehyde** and formaldehyde, an aldol from (WESSELY), A., i, 428.
- condensation of, with acetone (FRANKE and KOHN), A., i, 206.
- condensation of, with furfuraldehyde (LINDAUER), A., i, 305.
- condensation of, with glyoxal (v. HORNPOSTEL and SIEBNER), A., i, 206.
- iso***Butaldehyde**, α -bromo- (2-methyl-2-bromopropional) (FRANKE), A., i, 428.
- p*- α -bromo- (mono- and tri-meric) (FRANKE), A., i, 427.
- iso***Butane**, dinitro-, and its potassium derivative (PONZIO), A., i, 588.
- Butanedicarboxylic acids**. See:—
- Adipic acid.
- Dimethylsuccinnic acid.
- Methylglutaric acids.
- Propylmalonic acid.
- cyclo***Butanedicarboxylic acid** (*cis-tetramethylene-1:3-dicarboxylic acid*), formation of (BOTTOMLEY and PERKIN), T., 306; P., 1900, 16.
- Butanetetracarboxylic acid**, $\alpha\delta$ -di-bromo-, ethyl ester (LEAN), T., 103; P., 1899, 197.
- Butanol mercury salts** and **Butene-mercury iodide** (SAND and HOFMANN), A., i, 386.
- Butinene $\alpha\delta$ -di-bromide** (THIELE), A., i, 2.
- Butter**, rancidity of (BROWNE), A., ii, 115; (HANUS), A., ii, 634.
- detection of normal and "renovated" (HUMMEL), A., ii, 582.
- detection of "process" or "renovated" (HESS and DOOLITTLE), A., ii, 452.
- analysis of (RICHMOND), A., ii, 696.
- and its substitutes, analysis of (INDEMAN), A., ii, 115.
- refractometric value of (LAM), A., ii, 634.
- analysis of, refractometrically (PARTHEIL and v. VELSEN), A., ii, 633.
- detection of cotton-seed oil in (VAN ENGELN; SOLTSIEN), A., ii, 116; (STRZYZOWSKI), A., ii, 325.
- detection of sesamé oil in (WEIGMANN), A., ii, 40; (SOHN), A., ii, 55; (KERP), A., ii, 116; (BIEMER; SOLTSIEN), A., ii, 325; (AMTHOR), A., ii, 453.
- estimation of the volatile acids in, by Leffmann-Beam's glycerol-soda process (SEYDA), A., ii, 772.
- errors in the estimation of insoluble fatty acids in (MAINSBRECQ), A., ii, 114.
- estimation of fat in, by Gerber's process (WERDER), A., ii, 252.
- the Reichert number of fat in (STEBBINS), A., ii, 55.
- See also Agricultural Chemistry.
- n*-**Butyl isocyanide** (WADE), P., 1900, 157.
- iso***Butyl nitrite**, action of ethyl alcohol and alcoholic hydrogen chloride on (KISSEL), A., i, 621.
- phosphates and their lead and barium salts (CAVALIER and PROST), A., i, 579.
- tert*-**Butyl isocyanide** (NEF), A., i, 4.

*iso***Butylbenzene**, preparation and properties of (PERKIN), T., 268; P., 1899, 237.

*sec.***Butylbenzene** and its *p*-sulphonic acid (ESTREICHER), A., i, 213.

*4-tert.***Butylcoumarone** (STOERMER), A., i, 653.

Butylcytisine platinichloride, *iso*- and *sec.*- (LITTERSCHEID), A., i, 513.

Butylene, action of, on mercuric salts (SAND and HOFMANN), A., i, 385.

Butylenedicarboxylic acid. See Dimethylfumaric acid.

*iso***Butyrideneacetone**, its oxime and acetyl derivative (FRANKE and KOHN), A., i, 206.

*p-sec.***Butylphenol** and its acetyl derivative (ESTREICHER), A., i, 213.

5-Butylisophthalic acid, 2-nitro- (BAUR-THURGAU), A., i, 640.

Butyltoluenes. See Methylbutylbenzenes.

Butyltoluic acid, dinitro- (BAUR-THURGAU), A., i, 640.

5-Butyl-*p*-toluic acid (BAUR-THURGAU), A., i, 640.

Butylxylene (1:3-dimethyl-5-butylbenzene), and its derivatives (BAUR-THURGAU), A., i, 639.

Butylxyldine ($\text{Me}_2\text{C}_4\text{H}_9\text{NH}_2=1:3:5:2$), and its benzylidene and acyl derivatives, salts, and 4-*mono* and 4:6-*dinitro*- and their acetyl derivatives (BAUR-THURGAU), A., i, 639.

($\text{Me}_2\text{C}_4\text{H}_9\text{NH}_2=1:3:5:4$), and its salts and benzoyl derivative (BAUR-THURGAU), A., i, 640.

Butylxylyl cyanide, and its *dinitro*-derivative ("cyanide musk"), structure of (BAUR-THURGAU), A., i, 640.

Butylxylylaldehyde and its oxime (BAUR-THURGAU and BISCHLER), A., i, 178; (BAUR-THURGAU), A., i, 640.

Butylxylyl methyl ketone, structure of (BAUR-THURGAU), A., i, 640.

*iso***Butyralacetone** and its oxime (FRANKE and KOHN), A., i, 207.

Butyric acid, α -amino- (V. GULEWITSCH), A., i, 476.

d- and *l*- α -amino-, and their hydrochlorides (FISCHER and MOUNEY-RAT), A., i, 648.

γ -amino-, and its salts (TAFEL and STERN), A., i, 557.

β - and γ -chloro-, preparation of, and action of water on (DE BARR), A., i, 76.

γ -cyano- (DIECKMANN), A., i, 297.

*iso***Butyric acid**, *o*-nitrophenyl ester (BISCHOFF), A., i, 442.

*iso***Butyric acid**, α -bromo-, ethyl ester, condensation of, with ethyl malonates and ethyl cyanoacetates (LAWRENCE), P., 1900, 154.

α -iodo- (ZERNOFF), A., i, 328.

Butyric acids, *n*- and *iso*-, density of (V. HIRSCH), A., ii, 9.

α -thiocyano-, esters of, formation and boiling points of (WHEELER and BARNES), A., i, 565.

estimation of, in acetic acid (MUSPRATT), A., ii, 375.

separation of, from lactic and valeric acids (SCHNEIDER), A., ii, 177.

*p-iso***Butyroxy- ψ -cumyl**, and -**mesityl ethyl ether and bromide**, *dibromo*- (AUWERS, TRAUN, and WELDE), A., i, 169.

*p-n***Butyryl-acetanilide**, and -**aniline** (KUNCKELL), A., i, 665.

*iso***Butyrylactic and Butyrylacetacetic acids**, ethyl esters, and *iso***Butyryl-acetone**, synthesis of (BOUVEAULT), A., i, 474.

Butyryl-*o*-flavaniline (CAMPS), A., i, 310.

C.

Cacodylic acid, heat of neutralisation and acidimetry of (IMBERT), A., i, 145.

sodium salt, elimination of, in urine, after ingestion (IMBERT and BADEL), A., ii, 293.

estimation of, volumetrically (IMBERT and ASTRUC), A., ii, 122.

Cadinene from West Indian sandalwood oil (DEUSSEN), A., ii, 579.

nitroso-derivatives of (SCHREINER and KREMERS), A., i, 106.

Cadmium, colloidal (BREDIG), A., ii, 278.

boiling point of (BERTHELOT), A., ii, 654.

Cadmium alloys with platinum (HODGKINSON, WARING, and DESBOROUGH), A., ii, 282.

with sodium, composition and melting point of (KURNAKOFF), A., ii, 277.

Cadmium amalgam (KERN and BÖTTGER), A., ii, 656.

Cadmium orthoborate (OUVRARD), A., ii, 206.

haloids, compounds of, with the methylamines and tetramethylammonium (RAGLAND), A., i, 141.

hydroxide, equilibrium in the partition of an acid between ammonia and (HERZ), A., ii, 532.

iodide, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1246; P., 1900, 173.

trihydrated acid (DOBROSERDOFF), A., ii, 654.

- Cadmium ammonium phosphate**, estimation of cadmium in (AUSTIN), A., ii, 49.
 selenide, dimorphism of (FONZES-DIAON), A., ii, 346.
 ferrous sulphates, solubility of (STORTENBEKER), A., ii, 530.
 vanadinites, production of (DE SCHULTEN), A., ii, 346.
- Cadmium organic compounds**:—
 ferrocyanide (MILLER and FISHER), A., ii, 761.
- Cadmium, estimation of**:—
 estimation of, electrolytically (BALACHOWSKI), A., ii, 688.
 estimation of, gravimetrically (HESS), A., ii, 688.
 estimation of, in cadmium ammonium phosphate (AUSTIN), A., ii, 49.
 estimation of, in zinc (MACKAY), A., ii, 49.
- Cæsium**, preparation of, from the carbonate (GRAEFE and ECKARDT), A., ii, 75.
 physical properties of (ECKARDT and GRAEFE), A., ii, 479.
- Cæsium salts**, extraction of, from lepidolite (FORMÁNEK), A., ii, 15.
- Cæsium chloride**, compound of, with manganese chloride (MEYER and BEST), A., ii, 77.
 fluoroperiodate and hydrogen tetrafluoriodate (WEINLAND and KÜPPEN), A., ii, 139.
 persulphate (KURNAKOFF), A., ii, 277.
- Cæsium, detection of**:—
 microchemical detection of (HUYSE), A., ii, 245.
- Caffeine**, electrolytic reduction of (TAFEL), A., ii, 588.
 action of iodine on (KIPPENBERGER), A., ii, 777.
 action of, on the heart (BOCK), A., ii, 424.
 decomposition of, in the organism (KRÜGER), A., ii, 30, 93.
 influence of, on the output of alkalis in the urine (KATSUYAMA, KUWAHARA, and SENO), A., ii, 94.
 delicate test for (ARCHETTI), A., ii, 121.
- Caffeineazo-compounds** (GOMBERG), A., i, 264.
- Cakes, feeding.** See Agricultural Chemistry.
- Calcite and aragonite**, physicochemical relations of (FOOTE), A., ii, 541.
- Calcium and its compounds** (MOISSAN), A., ii, 76.
 metabolism of (LEIPZIGER), A., ii, 223.
- Calcium salts**, solubility of, in sucrose solutions (STOLLE), A., i, 333.
- Calcium salts**, colour reactions for detecting, in organic tissues (GRANDIS and MAININI), A., ii, 625.
- Calcium aluminates** (ALLEN and ROGERS), A., ii, 727; (DUFAY), A., ii, 728.
 boride, formation of (GEELMUYDEN), A., ii, 344.
 bromide, electrolysis of solutions of (SARGHEL), A., ii, 401.
 carbide, commercial (MOISSAN), A., ii, 15.
 action of amyl chloride on (LEFEBVRE), A., i, 323.
 reducing action of (GEELMUYDEN), A., ii, 344.
 analysis of (ERDMANN and v. UNRUH; MAGNANINI and VAN NINI), A., ii, 511.
 carbonate, solubility of, in sea water (COHEN and RAKEN), A., ii, 725.
 action of, on phosphoric acid (SCHLÖSING), A., ii, 541, 618.
 estimation of, in marls (NOLL), A., ii, 48.
 chloride, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1249; P., 1900, 173.
 hydroxide, action of, on germination (WINDISCH), A., ii, 614.
 oxide (in three forms), solubility of, in sugar solutions (WEISBERG), A., i, 628.
 oxide (*lime*), action of hydrogen peroxide on (DE FORCRAND), A., ii, 526.
 See also Agricultural Chemistry.
 peroxide, heat of formation of (DE FORCRAND), A., ii, 526.
 anhydrous, and the constitution of its hydrates (DE FORCRAND), A., ii, 479.
 peroxides, hydrated (DE FORCRAND), A., ii, 401.
 phosphate, preparation of (PRUNIER and JOUVE), A., ii, 140.
- Tricalcium phosphate**, solubility of, in natural waters in presence of carbonic acid (SCHLÖSING), A., ii, 541, 618.
- Calcium phosphates.** See also Agricultural Chemistry.
orthoplumbate and *perplumbate* (KASSNER), A., ii, 725.
 sulphate, hydrates of (VAN'T HOFF and ARMSTRONG), A., ii, 531.
 See also Gypsum.
 hydroximidosulphate, production of (DIVERS and HAGA), T., 690; P., 1900, 71.

- Calcium, detection, estimation, and separation of:**—
detection of barium, strontium, and (DUMESNIL), A., ii, 625.
estimation of, by the citrate method (PASSON), A., ii, 246.
estimation of, in presence of aluminium and iron (BLUM), A., ii, 511.
estimation of, photometrically, in limestone (HINDS), A., ii, 575.
separation of barium, strontium, and (KÜSTER), A., ii, 108.
- Calorimeter, a new coal** (PARR), A., ii, 710.
Bunsen's ice (MELLOR), A., ii, 334.
- Calves.** See Agricultural Chemistry.
- 2-Camphanamine, chloro-** (DUDEN and MACINTYRE), A., i, 302, 674.
- Camphane, 1-nitro-, ψ -nitro- and its potassium and benzoyl derivatives, 1:1-bromonitro-, 1:1-chloronitro-, and 1:1-iodonitro-** (FORSTER), T., 251; P., 1900, 13.
- i*-Camphane** (ASCHAN), A., i, 399.
- Camphanic acid, isomeride of** (PERKIN and THORPE), P., 1900, 152.
- Camphenamine, the vinylamine constitution of, and the action of methyl iodide and benzaldehyde on** (DUDEN and MACINTYRE), A., i, 302.
and the action of nitrous acid on it and its salts (DUDEN and MACINTYRE), A., i, 674.
- Camphene** (WAGNER and BRICKNER), A., i, 47, 554.
from borneol (SEMMLER), A., i, 351; (KONOWALOFF), A., i, 352.
constitution of, and action of fuming nitric acid on (BOUVEAULT), A., i, 508.
- Camphenepyrroles, synthesis of** (DUDEN and TREFF), A., i, 671.
- Camphenilanaldehyde and *n*- and *iso*-Camphenilanic acids** (BREDT and JAGELKI), A., i, 134.
- iso*Camphenone, constitution of** (RIMINI), A., i, 554.
- Camphenylone and its oximes** (BLAISE and BLANC), A., i, 183.
- Campherimine, decomposition products of** (MAHLA and TIEMANN), A., i, 507.
- ψ -Campholactone and its isomeride** (LEES and PERKIN), P., 1900, 18.
- Campholene, α -amino-** (BLANC), A., i, 581.
- Campholic acid, and bromo-, synthesis of, by means of camphoric acid** (v. BAEYER and VILLIGER), A., i, 133; (HALLER and BLANC), A., i, 202.
- Campholide** (v. BAEYER and VILLIGER), A., i, 133.
- Campholide, α -bromo-, its formula and hydrolysis** (LAPWORTH and CHAPMAN), T., 446; P., 1900, 56.
*di*bromo- (LAPWORTH and CHAPMAN), T., 310; P., 1900, 4.
- Campholytic acid and its stereoisomeride, reactions and structure of** (WALKER and CORMACK), T., 374; P., 1900, 58.
constitution of (BLANC), A., i, 581; (NOYES and PHILLIPS), A., i, 622.
- Camphonic acid, its oxime, semicarbazone, and phenylhydrazones, and action of bromine and of hydrogen cyanide on** (LAPWORTH and CHAPMAN), T., 446; P., 1900, 56.
- Camphonolactone, *mono*- and *tri*-bromo-** (LAPWORTH and CHAPMAN), T., 446; P., 1900, 56.
- Camphononic acid, formation of** (LAPWORTH), T., 1070.
action of bromine and hydrogen cyanide on, and its oxime (LAPWORTH and CHAPMAN), T., 452; P., 1900, 57.
- Camphopyric acid and anhydride, bromo-derivatives of** (GARDNER), P., 1900, 46.
- Camphor, constitution of** (LAPWORTH), T., 1053; P., 1900, 128; (BOUVEAULT), A., i, 182.
vapour pressure of (ALLEN), T., 413; P., 1899, 413.
solubility of, in hydrochloric and hydriodic acids (ZAHARIA), A., i, 106.
oxidation of, by an alkali ferricyanide (ETARD), A., i, 301.
aromatic compounds of, molecular refraction and dispersion, and specific rotation of (HALLER and MULLER), A., i, 182.
derivatives, molecular volume of (HALLER and MULLER), A., ii, 193.
spirit of, valuation of (PARTHEIL and VAN HAAREN), A., i, 507.
estimation of, polarimetrically, in camphorated oil (LEONARD and SMITH), A., ii, 699.
- Camphor, α -*di*bromo-, action of fuming nitric acid on** (LAPWORTH and CHAPMAN), T., 309; P., 1900, 4.
aa'-bromonitro- (LAPWORTH and CHAPMAN), T., 310; P., 1900, 4.
cyano-, and its chloro- and bromo-derivatives and their hydrolysis (LAPWORTH), T., 1053; P., 1900, 128.
- iso*Camphor, constitution of** (RIMINI), A., i, 554.
- β -*iso*Camphor and its phenylurethane** (DUDEN and MACINTYRE), A., i, 674

- Camphordioximes** (ANGELICO), A., i, 675.
- Camphorenic acid**, bromo-, formula of (LAPWORTH and CHAPMAN), T., 446; P., 1900, 56.
- Camphoric acid** (BALBIANO; NOYES). A., i, 202.
 constitution of (WALKER), T., 390; P., 1900, 60.
 experiments on the synthesis of (PERKIN and THORPE), P., 1900, 152.
 esterification of (WEGSCHEIDER), A., i, 10.
- l*-**isoCamphoric acid** and its ethyl esters (WALKER and WOOD), T., 383; P., 1900, 59.
- Camphoric acids**, configuration of (WALKER and WOOD), T., 383; P., 1900, 59; (WALKER), T., 395; P., 1900, 61.
- Camphoric anhydride**, action of aluminium chloride on (LEES and PERKIN), P., 1900, 18; (BLANC), A., i, 133, 586.
- Camphorone**, synthesis of, and its oxime and tribromo-derivative (BOUVEAULT), A., i, 207.
- Camphoronic acid**, formation of (LAPWORTH), T., 1071.
- iso***Camphoronic acid** (MAHLA and TIEMANN), A., i, 507.
- Camphoroxalic acid** and its condensation with amines (J. B. and A. TINGLE), A., i, 302.
- Camphoroxime**, compound of crystals of optical isomerides of (ROOZEBOOM), A., ii, 70.
- Camphoroximeacetic acid** and its sodium and bornylamine salts (FORSTER and HART-SMITH), T., 1154; P., 1900, 166.
- Camphorsemicarbazone** (RIMINI), A., i, 555.
- Canadic**, α - and β -**Canadinolic**, and **Canadolic acids** and **Canadoresen** (TSCHIRCH and BRÜNING), A., i, 678.
- Cane-sugar**. See **Sucrose**.
- "Cannel powder,"** a new explosive (ALVISI), A., ii, 205.
- Caoutchouc** (*indiarubber*), constituents of (WEBER), A., i, 353.
 wares, analysis of (HENRIQUES), A., ii, 124; (CHÉNEAU), A., ii, 639.
- Capillarity**, theory of (BAKKER), A., ii, 466.
- Caproic acid**. See **Hexoic acid**.
- Capronaldazine** (FRANKE), A., i, 213.
- Capsaicin**, reactions of (MICKO), A., ii, 58.
- Caramel** and its acetyl and benzoyl derivatives (STOLLE), A., i, 209.
- Caramel**, estimation of, spectroscopically, in aqueous solutions (STOLLE), A., ii, 249.
- Caranna resin**, examination of (DIETERICH), A., ii, 118.
- Carbamic chloride**, action of, on β -acetylphenylhydrazines (RUPE and LABHARDT), A., i, 258.
- Carbamide** (*urea*), preparation of, from guanidine (FLEMING), A., i, 280.
 rate of formation of, from solid ammonium cyanate (WALKER and WOOD), T., 30; P., 1899, 209.
 See also **Urea**.
- ψ -**Carbamides** (MENNE), A., i, 286.
- iso***Carbamides**, oxygen ethers of (STIEGLITZ and MCKEE), A., i, 340, 431.
- Carbamides**, substituted, action of acid reagents on (DAINS), A., i, 390.
 thio-. See **Thiocarbamides**.
- Carbaminocamidines** (WHEELER and SANDERS), A., i, 563.
- Carbaminothioglycollic acid** (WHEELER and BARNES), A., i, 565.
- Carbanilide**. See **Diphenylcarbamide**.
- Carbanilinoamino-diphenyl-and-ditolylguanidine**, thio- (BUSCH and BAUER), A., i, 414.
- Carbanilinoisobutyric acid**, α -thio-, ethyl ester (WHEELER and BARNES), A., i, 565.
- Carbazides**, preparation of (CAZENEUVE and MOREAU), A., i, 196.
- Carbethoxythiocarbamic acid**, ethyl ester, action of phenylhydrazine on (WHEELER and SANDERS), A., i, 564.
- Carbimides**, aromatic, action of alcohol on (VITTENET), A., i, 154.
 thio-. See **Thiocarbimides**.
- Carbiminothioglycollic acid**, *diamino*- (HARRIES and KLAMT), A., i, 413.
- Carbindigo** (GABRIEL and COLMAN), A., i, 359.
- Carbodiphenylimide**, additive products of (TRAUBE and EYME), A., i, 118.
- Carbohydrates** from the albumen of the seed of the American bean (GORET), A., ii, 562.
 from *Euonymus japonicus* (MAQUENNE), A., ii, 161.
 in lucerne and fenugreek seeds (BOURQUELOT and HÉRISSEY), A., ii, 233, 301.
 in the St. Ignatius bean and nuxvomica (BOURQUELOT and LAURENT), A., ii, 498, 611.
 action of hydrogen peroxide on, in presence of ferrous salts (MORRELL and CROFTS), T., 1219; P., 1900, 171.
 speed of assimilation of, during fasting (MOSSE), A., ii, 605.

Carbohydrates, behaviour of, in the body
(CHARRIN and GUILLEMONAT), A.,
ii, 606; (MÜNCH), A., ii, 607.
elimination of, in urine (ROSENFELD),
A., ii, 358.
nutritive value of, for denitrifying
organisms (STOKLASA), A., ii, 98.
digestion of, by *Aplysia* (RÖHMANN),
A., ii, 289.
phenylosazones of, purification and
rotatory power of (NEUBERG), A.,
i, 139.

carbohydrates. See also :—

Achroodextrin
Acroses.
Amylogen.
Arabinose.
Astragalose.
Bassorin.
Cane sugar (*sucrose*).
Cellulose.
Dextran.
Dextrin.
Dextrose (*glucose*).
Dulcitol.
Erythritols.
Erythrose.
Erythrulose.
Fucose.
Galactan.
Galactoarabinose.
Galactosamine.
Galactose.
d-Glucose (*dextrose*).
l-Glucose.
Glycogen.
Hemicelluloses.
Iditols.
Inulin.
Lactose.
Lævulomannan.
Lævulose (*fructose*).
Lyxose.
Maltodextrin.
*iso*Maltose.
Mannitol.
Mannocellulose.
Mannogalactan.
Mannose.
Melibiose.
Melitriose (*raffinose*).
Methyleneglucose.
Methylpentosans.
Methylpentoses.
Methylstrophanthobioside.
Oxycelluloses.
Pentoses.
Pentosans.
Raffinose.
Rhamninite.
Rhamninose.
Rhamnose.

Carbohydrates. See :—

Rhodoese.
Saccharose (*sucrose*).
Sorbitose (*sorbose*).
Sorbitol.
Starch.
Sucrose (*cane sugar*).
 ψ -Tagatose (*l-sorbitose*).
Trehalose.
Xylose.

Carbon, the molecule of (VAUBEL), A.,
ii, 274.

electrochemical equivalent of (PEASE),
A., ii, 257; (SKINNER), A., ii, 523.
amorphous, as a compressed powder,
electrical conductivity of (STRE-
INTZ), A., ii, 641.

Carbon alloys with iron, Osmond and
Roberts-Austen's theory of (HEYN),
A., ii, 557.

Carbon tetrachloride, preparation of
(SERRA), A., i, 74.

boiling point of, with mixture of
benzene and methyl alcohol (HAY-
WOOD), A., ii, 64.

Carbon monoxide (*carbonic oxide*) and
oxygen, influence of the nascent
state on the combination of dry
(RUSSELL), T., 361; P., 1900, 42.
supposed oxidation of, in the
organism (HALDANE), A., ii, 221.
in tobacco smoke, effect of, on the
organism (WAHL), A., ii, 221.

detection of, in blood (IPSEN;
WACHHOLZ), A., ii, 169.

iodometric estimation of small
quantities of (KINNICUT and
SANFORD), A., ii, 314.

Carbon dioxide (*carbonic anhydride*),
heat of vaporisation of (BEHN),
A., ii, 260.

specific heat of (AMAGAT), A., ii, 525.
dissociation constant of (WALKER and
CORMACK), T., 8; P., 1899, 208.

deviation from Boyle's law of mixtures
of hydrogen and (VERSCHAFFELT),
A., ii, 192.

invasion and evasion coefficients of, in
alcohol and water (BOHR), A., ii, 267.

liquid, analysis of, in cylinders
(HOLSTE), A., ii, 623.

action of, on barium borates (MORSE
and HORN), A., ii, 626.

elimination of, during respiration
(GRANDIS), A., ii, 604.

influence of moisture on the passage
of, from the blood to the air
(GRANDIS), A., ii, 604.

estimation of (SCHALLER), A., ii, 48.

estimation of, in the atmosphere
(WALKER), T., 1110; P., 1900, 164;
(LETTIS and BLAKE), A., ii, 622.

- Carbon dioxide** (*carbonic anhydride*), rapid estimation of, in gaseous mixtures (VIGNON and MEUNIER), A., ii, 314.
 estimation of, in carbonates (DIVINE), A., ii, 686.
 estimation of, in ammoniacal gas-liquor (CHEVALET), A., ii, 170.
 apparatus for the estimation of, in mineral waters (HELD), A., ii, 169.
 estimation of, in soils (SCHÜTTE), A., ii, 48.
 Stutzer and Hartleb's method for the estimation of combined, in soils (WOY), A., ii, 170.
- Carbon disulphide**, compounds of, with bromo-derivatives of ethane and aluminium bromide (KONOWALOFF and PLOTNIKOFF), A., i, 323.
 effect of, on soil organisms (WOLLNY), A., ii, 504.
 estimation of (RUSSELL), T., 359; P., 1900, 41.
- Carbon, estimation of—**
 estimation of, in iron (FORD and BRÉGOWSKY), A., ii, 168; (HERTING), A., ii, 245.
 estimation of, in iron or steel (SARGENT; AUCHY; RLOUNT), A., ii, 574.
 estimation of, in iron or steel, treatment of copper potassium chloride for the (SARGENT), A., ii, 440.
- Carbonyl chloride**, action of, on aromatic bases (VITTENET), A., i, 153.
 sulphide, estimation of (RUSSELL), T., 356; P., 1900, 41.
- Carbonylhydroferrocyanic acid** and hydroferrocyanic acid, comparison of heat of fractional neutralisation of (MULLER), A., ii, 130.
- Carbonylmethylaminophenol** (RANSOM), A., i, 219.
- iso*Carbostyryl, and the formation of its derivatives (GABRIEL and COLMAN), A., i, 858.
- Carboxylaminophenols**, *di*bromo- (VAN DAM), A., i, 171.
- α -Carboxyphenoxy-propionic, *n*- and *iso*-butyric, and *iso*valeric acids, *m*- and *p*-, and their ethyl esters (BISCHOFF), A., i, 397.
- o*-Carboxyphenylglycollic acid, anilide, phenetide, and aniside of (COHN), A., i, 93.
- Carmin**, α - and β -bromo-, and **Carminic acid** and its derivatives (LIEBERMANN, HÜRING, and WIEDERMANN), A., i, 236.
- Carnallite**, equilibrium relations of (VAN'T HOFF and MEYERHOFFER), A., ii, 12.
- Carnallites**, production of substituted (DE SCHULTEN), A., ii, 343.
- Carnosine** from meat extract (v. GULEWITSCH and AMIRADŽIBI), A., i, 516.
- Carnotite** from West Colorado (HILLEBRAND and RANSOME), A., ii, 599.
- Carob bean seeds**, enzyme of (BOURQUELOT and HERISSEY), A., i, 320; ii, 35, 233.
- Caro's acid** or **Caro's reagent** (BACH), A., ii, 470; (BAMBERGER), A., ii, 536.
 preparation of, and action of permanganate on (v. BAEYER and VILGIGER), A., ii, 719.
 oxidation of aliphatic amines, and of aromatic iodides by (BAMBERGER and HILL), A., i, 281.
 action of, on furfuraldehyde (CROSS, BEVAN, and BRIGGS), A., i, 682.
 action of, on ketones (v. BAEYER and VILGIGER), A., i, 133, 206, 328, 627.
 action of, on oximes (BAMBERGER), A., i, 500.
 See also Persulphuric acids under Sulphur.
- Carpaine**, action of phenylthiocarbimide on (LITTELSCHIED), A., i, 516.
- Carpic acid**, bromo- (PINNER and KOHLHAMMER), A., i, 456.
- Carthamus tinctorius*, oil of (*safflower oil*) (LE SUEUR), A., ii, 362.
- Cartilage**, fat in (SACERDOTTI), A., ii, 291.
 sodium in (v. BUNGE), A., ii, 92.
 of the shark, composition of (v. BUNGE), A., ii, 29.
- Carvaerol**, sodium derivative, compounds of, with the ethyl esters of α -bromo- fatty acids (BISCHOFF), A., i, 394.
 bromo- and chloro-amino-, diacetyl derivatives of (KEHRMANN and SCHOEN), A., i, 181.
- α -Carvacroxy-propionic, *n*- and *iso*-butyric, and *iso*valeric acids and their ethyl esters (BISCHOFF), A., i, 394.
- Carvacryl-acetal**, and **acetaldehyde** and its semicarbazone (STOERMER), A., i, 653.
- Carvenone** from dihydrocarvone (KONDAKOFF and LUTSCHININ), A., i, 104; (KLAGES), A., i, 239.
- Carvomenthene** and **Carvomenthol** and their derivatives (KONDAKOFF and LUTSCHININ), A., i, 104.
- Carvone**, conversion of, into limonene (TSCHUGAEFF), A., i, 352.
dichloride and its reactions (KLAGES and KRAITH), A., i, 43.

- Carvone**, estimation of, in volatile oils (LABBÉ), A., i, 398; (ALDEN and NOLTE), A., ii, 117; (ALDEN and EHLERT), A., ii, 631.
- Carvones**, ψ - and σ -, formulæ of (SEMMER), A., i, 453.
- Carvonedihydrodisulphonic acid** (LABBÉ), A., i, 398.
- Carvotanacetone**, constitution of (SEMMER), A., i, 676.
- i*-Carvoxime**, nature of (ROOZEBOOM), A., i, 240.
- Caryophyllene** and its nitroso-derivatives (SCHREINER and KREMER), A., i, 106.
- Cascarilla oil**, constituents of (THOMS), A., i, 622.
- Cascarillic acid** and its amide, and the action of nitric acid on (THOMS), A., i, 622.
- Casein**, decomposition of, by sulphuric acid (KUTSCHER), A., i, 67.
- Caseinogen** of human milk (KOBRAK), A., ii, 420.
- Cassiterite** from Banca and Billiton (BECK), A., ii, 734.
analysis of (MENNICKE), A., ii, 761.
- Cat**, nitrogenous metabolism in the (MENDEL and BROWN), A., ii, 151.
- Catalysis**. See Affinity, chemical.
- Catechobis- α -oxy-propionic**, *n*- and *iso*-butyric, and *isovaleric acids*, their ethyl esters and lactones (BISCHOFF), A., i, 445.
- Catecho-mono- and -bis-oxypropionyl-p-phenetidides** (BISCHOFF), A., i, 445.
- Catechol** (*pyrocatechol*: 1:2-dihydroxybenzene), action of picryl chloride on (HILLYER), A., i, 289.
condensation of the disodium derivative, with esters of α -bromo-fatty acids (BISCHOFF), A., i, 445.
derivatives (MOUREU), A., i, 99.
- Catechol-acetanilide**, -methylanilide, -piperidine, -phenylhydrazide, and -p-toluidide (LUDEWIG), A., i, 444.
- Catecholacetic acid** (*o*-hydroxyphenoxylacetic acid), and its ethyl ester, anhydride and anilide (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
and its esters and anhydride, and acetyl and bromo- and nitro-derivatives (LUDEWIG), A., i, 444.
- Catecholcarbobenzylisoamylamine** (EINHORN and PFEIFFER), A., i, 222.
- Cattle**. See Agricultural Chemistry.
- Ceanothus americanus***, alkaloïds of (GORDIN), A., i, 683.
- Cedron**, $C_{16}H_{18}O_6$ or $C_{14}H_{16}O_5$, its acetyl derivative and methyl ether (ČEČELSKY), A., i, 225.
- Celadonite** from Moravia (KOVÁK), A., ii, 149.
- Celestite** from Baltschiederthal, Switzerland (SCHMIDT), A., ii, 217.
- Cells**, galvanic. See Electrochemistry.
- Cellulose**, does, occur in the shield of *Sepia*? (SCHULZ), A., ii, 292.
molecular weight of (NASTUKOFF), A., i, 540.
specific heat of (FLEURY), A., ii, 188.
fermentation of (OMELIANSKY), A., ii, 493.
enzymes (NEWCOMBE), A., ii, 99.
acetyl derivatives of (FRANCHIMONT), A., i, 141; (VIGNON and GERIN), A., i, 629.
nitrates (LUCK and CROSS), A., i, 541; (VIGNON), A., i, 589.
reduction of (VIGNON), A., i, 629.
estimation of (BECK; KÖNIG), A., ii, 448; (COUNCLER), A., ii, 630.
estimation of, in fæces (MANN), A., ii, 250.
estimation of, in plants (KLEIBER), A., ii, 630.
- Cell-wall constituents**, estimation of, in plants (KLEIBER), A., ii, 630.
- Cements**, change of volume of, during hydration (LE CHATELIER), A., ii, 140.
testing of (KLEIN and PECKHAM), A., ii, 627.
- Cereals**. See Agricultural Chemistry.
- Cerebrin** (*phrenosin*), reactions of (THRIDICHUM), A., i, 319.
- Cerebro-spinal fluid**, composition of (PANZER), A., ii, 152.
absence of choline in (v. GULEWITSCH), A., ii, 420.
- Cerite metals**, preparation of the sulphur, bromine and chlorine compounds of (MUTHMANN and STÜTZEL), A., ii, 142.
See also Earths, rare.
- Cerium salts**, oxidation of, in alkaline solution (JOB), A., ii, 657.
- Cerium**, double nitrates of quadrivalent (MEYER and JACOBY), A., ii, 597.
oxide (*ceria*), luminosity of mixtures of thoria and (THIELE), A., ii, 208.
sulphates (MUTHMANN and STÜTZEL), A., ii, 544.
estimation of (BROWNING), A., ii, 170; (v. KNORRE), A., ii, 576.
separation of, from the cerite earths (WITT and THEEL), A., ii, 403.
- Cerussite** from the Altai (v. JEREMÉEFF), A., ii, 354.
- Cetipic acid** (*oxalldiacetic acid*), ethyl ester, action of hydrocyanic acid on (THOMAS-MAMERT and WEIL), A., i, 427.

- Cetipic acid** (*oxaldiacetic acid*), ethyl ester, condensation of, with ethylene-diamine and naphthylene-*o*-diamines (THOMAS-MAMERT and WEIL), A., i, 459.
- Cetylcytisine** (RAUWERDA), A., i, 608, 684.
- Chabazite** from North Carolina (PRATT), A., ii, 24.
from Sardinia, and from the granulites of Striegau (RIMATORI), A., ii, 735.
- Chalcolamprite** from Greenland (FLINK), A., ii, 412.
- Champagne**, analyses of modern "dry" (ROSENHEIM and SCHIDROWITZ), A., ii, 372.
- Change**, permanent, and thermodynamics (DUHEM), A., ii, 524, 708.
- Cheese**. See Agricultural Chemistry.
- Cheiranthin** and **Cheirinine** from wall-flower (REEB), A., i, 186.
- Chelerythrine** (MURRILL and SCHLOTTERBECK), A., i, 686.
- Chemical action**. See Affinity.
constitution and composition in relation to density (KANONNIKOFF), A., ii, 134.
and fluorescence (HEWITT and PERKINS), T., 1324; P., 1900, 178; (HEWITT), P., 1900, 3; A., ii, 518.
and physiological action, relation between (PADERI), A., ii, 742.
kinetics (RAMBERG), A., ii, 717.
gaseous reactions in (BODENSTEIN), A., ii, 12.
and free energy of the reaction $2\text{HI} + 2\text{Ag} \rightleftharpoons 2\text{AgI} + \text{H}_2$ (DANNEEL), A., ii, 467.
- Chemistry**, progress of, in Great Britain and Ireland during the 19th century (THORPE), T., 562.
- Chicory**, constituents of (WOLFF), A., ii, 37.
- Chitosamine**. See Glucosamine.
- Chloral**, boiling points of mixtures of water and (CHRISTENSEN), A., i, 626.
action of, on the chloroacetic acids (GABUTTI), A., i, 370.
compound of, with benzylquinaldine (KOENIGS), A., i, 189.
- Chloral alcoholate**, estimation of (SCHMIDINGER), A., ii, 327.
- Chloral hydrate**, physico-chemical properties of (MAUCH), A., ii, 454.
melting point of (WOLF), A., i, 274.
action of, on hæmoglobin (FORMÁNEK), A., i, 532.
use of, in estimating alkaloids (SCHAER), A., ii, 57.
estimation of, in organs (RUSSWURM), A., ii, 121.
- Chloral hydrate**, estimation of chloroform and, in toxicological analysis (KIPPENBERGER), A., ii, 581.
- Chlorella vulgaris*, culture of (RADAIS), A., ii, 362.
- Chlorethane**. See Acetonechloroform.
- Chlorine**, evolution of, from chlorates (SODEAU), T., 137, 717; P., 1899, 157; 1900, 88.
amount of, in rain-water collected at Cirencester (KINCH), T., 1271; P., 1900, 183.
spectrum of (EDER and VALENTA), A., ii, 72.
ions, the discharge potential of (MÜLLER), A., ii, 643.
liquid, some properties of (LANGE), A., ii, 649.
colour of solutions of (SARLES), A., ii, 72.
action of, on metallic silver in the light and in the dark (v. CORDIER), A., ii, 343, 723.
nascent, action of, on sulphonic groups in naphthalene derivatives (VAUBEI), A., i, 544.
- Hydrochloric acid** (*hydrogen chloride*), effect of concentration on the magnetic rotation of solutions of (FORCHHEIMER), A., ii, 524.
and sulphuric acid, conductivity of aqueous solutions of (BARNES), A., ii, 522.
dissociation and dissociation equilibrium of (JAHN), A., ii, 522.
dissociation constant of, dissolved in mixtures of organic solvents and water (MORELLO), A., ii, 395.
reversible reaction between silver and (JOUNIAUX), A., ii, 139.
absorption of, from aqueous solution, by colloidal stannic oxide (VAN BEMMELEN and KLOBBIE), A., ii, 338; (VAN BEMMELEN), A., ii, 466.
formation of, in the stomach (WESERNER), A., ii, 92.
estimation of, in the presence of chlorates and perchlorates (BLATTNER and BRASSEUR), A., ii, 755.
combined, estimation of (COHNHEIM and KRIEGER), A., ii, 778.
estimation of, in gastric juice (COHNHEIM and KRIEGER), A., ii, 508.
- Chloride of lime**. See Bleaching powder.
- Chlorates**, electrolytic formation of (FOERSTER), A., ii, 72, 400; (MÜLLER), A., ii, 73; (BROCHET), A., ii, 205, 276, 541, 706; (FOERSTER and JORRE), A., ii, 343; (WOLF), A., ii, 382; (SIE-

Chlorine:—

VERTS), A., ii, 470; (WOHLWILL), A., ii, 400, 471; (LORENZ and WEHRLIN), A., ii, 476; (FOERSTER and SONNEBORN), A., ii, 645.

Chlorates, decomposition of (SODEAU), T., 137, 717; P., 1899, 157; 1900, 88.

estimation of, in the presence of chlorides and perchlorates (BLATTNER and BRASSEUR), A., ii, 755.

mixtures of hypochlorites and, iodometric estimation of (DITZ and KNÖPFELMACHER), A., ii, 241.

Hypochlorous acid, action of, on unsaturated acids (MELIKOFF), A., i, 536.

action of, on primary aromatic amines (MEIGEN and NORMANN), A., i, 702.

action of, on tertiary amines (WILLSTÄTTER and IGLAUER), A., i, 458.

action of, on anilides (CHATTAWAY and ORTON), T., 134, 789, 797; P., 1899, 232; P., 1900, 102, 112; (CHATTAWAY, ORTON, and HURLEY), T., 800; P., 1900, 125; (ARMSTRONG), T., 1047; P., 1900, 160.

action of, on diacetyl- and dibenzoyl-*m*-phenylenediamine (MORGAN), T., 1203; P., 1900, 170.

Hypochlorites, electrolytic formation of (FOERSTER), A., ii, 72, 400; (MÜLLER), A., ii, 73; (BROCHET), A., ii, 205, 276, 541; (FOERSTER and JORRE), A., ii, 343; (WOHLWILL), A., ii, 400, 471; (SIEVERTS), A., ii, 470; (LORENZ and WEHRLIN), A., ii, 476; (FOERSTER and SONNEBORN), A., ii, 645.

electrolysis of solutions of (BROCHET), A., ii, 594, 706.

Perchloric acid, preparation of (MICHAEL and CONN), A., ii, 471. anhydrous, preparation and properties of (VORLÄNDER and v. SCHILLING), A., ii, 340.

estimation of, in the presence of chlorates and chlorides (BLATTNER and BRASSEUR), A., ii, 755.

Perchlorate in sodium nitrate, injurious effect of, on the growth of sugar beet (STOKLASA), A., ii, 305.

Chlorine monoxide, action of, on benzene (SCHOLL and NÖRR), A., i, 337.

heptoxide (MICHAEL and CONN), A., ii, 471.

Chlorine, estimation and separation of:—

estimation of, in bleaching powder (WOŁOWSKI), A., ii, 165.

Chlorine, estimation and separation of:—

estimation of, in presence of bromine and iodine (v. WESZELSZKY), A., ii, 436.

estimation of, in gastric juice (MEILLÈRE), A., ii, 509.

separation of, from bromine and iodine (CROTOGINO), A., ii, 642.

separation of, from iodine (VANINO and HAUSER), A., ii, 165.

Chloroform, boiling point of, with mixtures of benzene (HAYWOOD), A., ii, 64.

action of, on alkaloid salts (HILL; SCHAEER), A., ii, 455.

action of, on dimethylpyrrolines (BOCCCHI), A., i, 357.

action of, on hæmoglobin (FORMANEK), A., i, 532.

non-elimination of, after inhalation (VITALI), A., ii, 31.

estimation of chloral hydrate and, in toxicological analysis (KIPPENBERGER), A., ii, 581.

Chloroglobulin, the colouring matter of leaves (TSVET), A., i, 50.

Chlorophyll. See Agricultural Chemistry.

Cholesterol, reduction of, to coprosterol in the intestine (MÜLLER), A., ii, 289.

detection of, in fats (KREIS and RUDIN), A., ii, 252.

Choline in the suprarenal gland (HUNT), A., ii, 295.

absence of, in cerebro-spinal fluid (v. GULEWITSCH), A., ii, 420.

Chrome alum, nature of the change from violet to green in solutions of (WHITNEY), A., ii, 211; (VENABLE), A., ii, 349.

Chrome steel, analysis of (M'KENNA), A., ii, 765.

estimation of phosphorus in (IBBOTSON and BREARLEY), A., ii, 757.

Chromite (*chrome iron ore*) from Newfoundland (MAYNARD), A., ii, 86.

simple method of decomposing (FIEBER), A., ii, 512.

analysis of, by the borax method (MACIVOR), A., ii, 765.

estimation of silica in (TATE), A., ii, 313.

Chromium in plants (DEMARÇAY), A., ii, 235.

electro-deposition of (COWPER-COLES), A., ii, 408.

electromotive behaviour of (HITTORF), A., ii, 127; (MORGAN and DUFF), A., ii, 589.

behaviour of, towards acids (OSTWALD), A., ii, 730.

- Chromium salts**, hydrolysis of (RICHTARDS), A., ii, 472.
 action of sodium thiosulphate on (FAKTOR), A., ii, 691.
- Chromium azoimide**, basic (CURTIUS and DARAPSKY), A., ii, 474.
 phosphide, preparation of (MARONNEAU), A., ii, 281.
 potassium and sodium sulphates (PAGEL), A., ii, 349.
- Chromium salts**, oxidation of, by atmospheric oxygen (MANCHOT and HERZOG), A., ii, 546.
 oxide, double carbonates of (BAUGÉ), A., ii, 349.
 ammonium sulphate (LAURENT), A., ii, 547.
- Chromic acid**, recovery of, from chromium residues (REGELSBERGER), A., ii, 79.
 estimation of, volumetrically, by arsenious acid (REICHARD), A., ii, 691.
 estimation of, in solutions for purifying acetylene (ÜLLMANN and GOLDBERG), A., i, 1.
- Chromates**, alkali, detection of, in milk (LEYS), A., ii, 110.
- Chromium organic compounds** :—
- Chromium salts**, compounds of, with pyridine, triethylenediamine and tripropylenediamine (PFEIFFER), A., i, 559.
- Chlorochromic acid**, pyridine and quinoline salts of (MEYER and BEST), A., ii, 79.
- hexa*-**Chlorotrichromyl chloride**, pyridine salt of (MEYER and BEST), A., ii, 79.
- Chromium**, estimation and separation of :—
 estimation of, in iron and steel (DÖHLER; MAHON), A., ii, 110.
 separation of, from iron (HAVENS and WAY), A., ii, 50.
- "Chromone"** (*pheno- γ -pyrone*) (BLOCH and v. KOSTANECKI), A., i, 308.
- Chromyl dichloride**, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.
 action of nitric oxide on (THOMAS), A., ii, 144.
- Chrysanthemum japonicum*, oil of (PERRIER), A., i, 352.
- Chrysarobin** and its acetyl derivatives (HESSE), A., i, 41.
 oxidation products of (MARFORI), A., i, 553.
- Chrysean**, its acetyl derivative and its condensation with aldehydes (HELLSING), A., i, 518.
- Chrysenic acid** (GRAEBE and HÖNIGSBERGER), A., i, 506.
- Chrysenic acids**, constitution of (GRAEBE), A., i, 296.
- Chrysoidine** hydrochloride, bromo- and chloro- (MORGAN), T., 1205; P., 1900, 170.
- Chrysoidinesulphonic acid**, chloro- and bromo-, potassium salts of (MORGAN), T., 1205.
- Chrysoketone** and its carboxylic acid (GRAEBE and HÖNIGSBERGER), A., i, 505.
- Chrysophanic acid** (*dihydroxymethyl-anthraquinone*) and its acetyl derivatives (HESSE), A., i, 40; (LIEBERMANN), A., i, 355.
 isomeric forms of (MARFORI), A., i, 553.
- Chrysophanohydroanthrone** and its diacetyl derivative (HESSE), A., i, 42.
- Chrysoquinone** and its oxidation products, and its oxime and acids (GRAEBE and HÖNIGSBERGER), A., i, 505.
- Chrysotile**, composition of (VAN DER BELLEN), A., ii, 603.
- Chymosin** and **Parachymosin** (BANG), A., ii, 356.
- Chyle**, human (PANZER), A., ii, 672.
 composition of the fat of (ERBEN), A., ii, 739.
- Cider** and **Cider vinegar**, analysis of solids and ash of (DOOLITTLE and HESS), A., ii, 450.
- Cigars**, estimation of nicotine in (THOMS), A., ii, 428.
- apo***Cinchonine**, its constitution and its nitro- and amino-derivatives and their ethers (KOENIGS), A., i, 245.
- Cinchomeronic acid**, esterification of (KIRPAL), A., i, 51.
- Cinchona alkaloids**, conversion of, into 4-phenylquinoline derivatives (KOENIGS), A., i, 245.
- α - and β -*iso*- ψ -**Cinchonicine** and their compounds (SKRAUP), A., i, 605; (SKRAUP and ZWERGER), A., i, 606.
- Cinchonine** and its compounds (SKRAUP and ZWERGER), A., i, 606.
 molecular transformation of (WEGSCHEIDER), A., ii, 532.
- α - and β -*iso***Cinchonine** and their compounds (SKRAUP and ZWERGER), A., i, 606.
- β -*iso***Cinchonine**, constitution of, and its compounds (SKRAUP), A., i, 605.
- allo***Cinchonine sulphate** (SKRAUP and ZWERGER), A., i, 606.
- Cinder**, blast-furnace, estimation of alumina as phosphate in (CAMP), A., ii, 763.

- Cinenic acid** and its esters and **Cineolic acid** (RUPE), A., i, 371.
- Cinnamal-**. See **Cinnamylidene-**.
- Cinnamaldehydophenylhydrazone**, oxidation of (MINUNNI and ORTOLEVA), A., i, 260.
- Cinnamene**. See **Styrene**.
- Cinnamhydroxamic acid** and its acetyl and benzoyl derivatives (THIELE and PICKARD), A., i, 29.
- Cinnamic acid** (*β -phenylacrylic acid*), sublimation point of (LIEBERMANN and RIIBER), A., i, 648.
ethyl ester, action of aniline and hydroxylamine on (TINGLE), A., i, 544.
condensation of, with phenylacetonitrile (ERLENMEYER), A., i, 493.
- Cinnamic acid**, *m*- and *p*-amino-, glycinyl derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 494.
- allo***Cinnamic acid**, boiling point of (LIEBERMANN and RIIBER), A., i, 648.
- Cinnamonitriles**, *o*-nitro- and *o*-amino-, isomeric change of (PSCHORR and WOLFES), A., i, 170.
- Cinnamylguaiaicol** (COHN), A., i, 548.
- Cinnamylidenecetic acid**, and the *allo*-acid, sublimation points of (LIEBERMANN and RIIBER), A., i, 648.
- Cinnamylidene-2-naphthylamine**, 1-bromo- and 1-chloro-, and their hydrocyanides (MORGAN), T., 1217; P., 1900, 171.
- Cinnamylidenesemicarbazone**, oxidation of (YOUNG and WITHAM), T., 230; P., 1900, 5.
- Circulation**, influence of iodine, sodium iodide, and iodothyryl on the (BARBERA), A., ii, 291.
influence of removal of water on the (STRAUB), A., ii, 91.
- Citral**, from oil of verberna (KERSCHBAUM), A., i, 353.
stereoisomerism of (TIEMANN and KERSCHBAUM), A., i, 331; (BARBIER), A., i, 508.
colour reaction for (BURGESS), A., ii, 774.
- b-Citralidenecyanoacetic acid** (TIEMANN), A., i, 331.
- Citrapyrotartaric acid**. See **Methylsuccinic acid**.
- Citrazinic acid**, constitution of (SELL and DOOTSON), T., 233; P., 1900, 9.
- Citric acid** in saturation-sludge (ANDELIK), A., ii, 679.
oxidation of, by potassium permanganate (DENIGES), A., i, 89, 204, 274; (SABBATANI), A., i, 536.
physiological action of (SABBATANI), A., ii, 32.
- Citric acid**, salts of, oxidation of, by potassium permanganate or by iron (SABBATANI), A., i, 536.
alkali copper salts of (BULLNHEIMER and SEITZ), A., i, 330.
detection of (DENIGES), A., i, 89.
detection of salicylic acid in presence of (LANGKOFF), A., ii, 695, 769; (CONRADY; GEROCK), A., ii, 769; (KLETT), A., ii, 770.
- Citronella oil** (SCHIMMEL and Co.), A., i, 184.
estimation of geraniol in (SCHIMMEL and Co.), A., ii, 175.
- Citronellal**, isomeric change of (LABBÉ), A., i, 136.
- Citronellaldimethylacetal** (HARRIES), A., i, 331.
- Citronellol** (BOUVEAULT), A., i, 452.
- Citronellyl and Citryl barium sulphites**, formation of (LABBÉ), A., i, 137.
- Civet**, constituents of (WALBAUM), A., i, 509.
- Clay**, fireproof, from Moravia (KOVÁŘ), A., ii, 147.
rapid estimation of, in soils (POQUILLON), A., ii, 316.
separation of, from sand in soils (SCARLATA), A., ii, 368.
- Clays**, examination of (GLINKA), A., ii, 89.
estimation of sand in (CRONQUIST), A., ii, 171.
- Clover**. See **Agricultural Chemistry**.
- Coal** from Bohemia (EICHLEITER), A., ii, 354.
from New Zealand, composition of (BEDSON), A., ii, 20.
spontaneous combustion of (GRIMM), A., ii, 205.
apparatus for determining the calorific value of (MAGNANINI and ZUNINO), A., ii, 465.
analysis (NOYES, HILLEBRAND, and DUDLEY), A., ii, 168.
estimation of phosphorus in (CAMP), A., ii, 756.
- Coal calorimeter**, new (PARR), A., ii, 710.
- Coal gas**, naphthalene vapour in (ALLEN), A., i, 339.
estimation of benzene and ethylene in (HABER), A., ii, 629.
estimation of naphthalene in (COLMAN and SMITH), A., ii, 372.
- Cobalt**, atomic weight of (RICHARDS and BAXTER), A., ii, 78.
specific heat of (TILDEN), A., ii, 524.
passivity of (HITTORF), A., ii, 706.
occlusion of hydrogen by (BAXTER), A., ii, 78.

- Cobalt salts**, oxidation of, in alkaline solution (JOB), A., ii, 657.
- Cobalt borates** (OUVRARD), A., ii, 207.
- chloride, thermal capacity and colour changes of solutions of (WREWSKY), A., ii, 63.
- fluoride, double salts of, with aluminium or ferric fluoride (WEINLAND and KÖPPEN), A., ii, 143.
- nitrite, double potassium and sodium salt of (ADIE and WOOD), T., 1076; P., 1900, 17.
- sodium nitrite, preparation of (BILL-MANN), A., ii, 624.
- oxides, formation of (MAWROW), A., ii, 596.
- hydrated, green- and buff-coloured (HARTLEY), P., 1899, 202.
- phosphide, preparation of (MARON-NEAU), A., ii, 281.
- potassium sulphate (MALLER), T., 222; P., 1899, 227.
- Cobalt organic compounds**:—
- Cobaltammonium compounds**, thiocyanato- (WERNER, MÜLLER, KLIEN, and BRÄUNLICH), A., i, 86; (V. ZAWIDZKI), A., i, 210.
- thiocyanate and its double salts (MIOLATI), A., i, 381.
- Oxycobaltamine** thiocyanates (MASCETTI), A., i, 541.
- Cobalticyanides**, their preparation and use in analysis (MILLER and MATHEWS), A., ii, 318; (MATHEWS), A., ii, 578.
- Cobaltocyanide**, potassium, oxidation of, by atmospheric oxygen (MANCHOT and HERZOG), A., ii, 546.
- Cobalt, estimation and separation of**:—
- estimation of, in New Caledonian ores (MOORE), A., ii, 764.
- estimation and separation of small quantities of, in presence of nickel (MOORE), A., ii, 764.
- separation of, from nickel, by the action of ammonium hydroxide on the ferricyanides (BROWNING and HARTWELL), A., ii, 765.
- separation of, from nickel, by means of persulphates (MAWROW), A., ii, 596, 765.
- separation of, from nickel, by means of their sulphides (TOWER), A., ii, 690.
- Cobalt ores**, auriferous, from the Transvaal (OEHMICHEN), A., ii, 147.
- Cobra toxin and antitoxin** (MYERS), A., ii, 558.
- Cocaine**, chromic acid test for (SCHAEFER), A., ii, 58.
- Cochinellic acid**, mixed esters and diketohydrindene derivatives of (LANDAU), A., i, 661.
- Cocoanut ash**, composition of (BACHOFEN), A., ii, 302; (BAIN and BACHOFEN), A., ii, 497.
- Codeine**, colour test for (ROBERT), A., ii, 121.
- Cærulein and Cærulín** and their acetyl derivatives (ORNDORFF and BREWER), A., i, 448.
- Coffee extracts**, their composition and analysis (MOOR and PRIEST), A., ii, 379.
- Coke**, estimation of volatile combustible matter in (MEADE and ATTIX), A., ii, 168.
- estimation of phosphorus in (CAMP), A., ii, 756.
- Colloid**, ovarian (PANZER), A., i, 70.
- Colloidal solutions**, nature and properties of (BREDIG and COEHN), A., ii, 269; (BRUNI and PAPPADA), A., ii, 591.
- dissociation in (LEVI), A., ii, 646.
- metallic (STOECKL and VANINO), A., ii, 11, 713; (ZSIGMONDY), A., ii, 397.
- preparation of, by the electric discharge (BREDIG), A., ii, 213.
- Colloids**, absorption and emission of water vapour by (DUHEM), A., ii, 338.
- absorption of matters from solution by (VAN BEMMELEN), A., ii, 466.
- Colophony oil**, composition of (KRAEMER and SPILKER), A., i, 150.
- Coloradoite** (?) from California (HILLEBRAND), A., ii, 22.
- Colour of alkali nitrites** (DIVERS), P., 1900, 40.
- of bromine and iodine compounds, effect of very low temperatures on (KASTLE), A., ii, 526.
- of chlorine solutions (SARLES), A., ii, 72.
- of solutions of chrome alum, change in (WHITNEY), A., ii, 211; (VENABLE), A., ii, 349.
- of solutions of cobalt chloride, change of (WREWSKY), A., ii, 63.
- of Congo-red, cause of the change of, by the action of acids (SCHIMANSKY), A., i, 305.
- of minerals (NABL), A., ii, 661.
- of picric acid and its solutions (MARCKWALD), A., i, 391.
- of aqueous salt solutions, causes of the changes of (KONOWALOFF), A., ii, 266.
- of sodium nitrite solutions (BOGUSKI), A., ii, 75.
- changes. See also Phototrophy.
- Colour-bases**, transformation of, into pseudo-ammonium hydroxides, -cyanides, and -sulphonic acids (HANTZSCH and OSSWALD), A., i, 256.

Coloured substances, derived from nitro-compounds (HANTZSCH and KISSEL), A., i, 89; (JACKSON and GAZZOLU), A., i, 433.

Colouring matters from *p*-aminophenol, hydroxyazobenzene and sulphur (RIS), A., i, 419.

of annatto (ZWICK), A., i, 513.

of *Arctostaphylos Uva-ursi*, *Coriaria myrtifolia*, *Haematoxylon campechianum*, *Myrica Gale*, *Rhus Metopium*, and *Robinia Pseudacacia* (PERKIN), T., 423; P., 1900, 45.

in blood, simultaneous estimation of two (HÜFNER), A., ii, 459.

of chlorophyll and their spectra (MARCHLEWSKI and SCHUNCK), T., 1080; P., 1900, 148.

coal-tar, detection of, in food and fruit products (WINTON), A., ii, 776.

from *Digitalis lutea* (ADRIAN and TRILLAT), A., i, 185.

$C_{16}H_{12}ON_2$, of *Echinus esculentus* (GRIFFITHS), A., ii, 677.

of the formazyl group (FICHTER and SCHIESS), A., i, 366.

of leaves (SCHUNCK), A., ii, 36.

$C_{22}H_{16}O_4$, from the oxidation of methoxynaphthol (RUSSIG), A., i, 602.

of saffron (HILGER), A., i, 682.

in "sugar-colours," and their detection (SCHWEITZER), A., i, 277.

resembling indulines, electrolytic preparation of (LÖB), A., i, 464.

oxazine, constitution of (KEHRMANN), A., i, 61; (GREEN), A., i, 119.

oxazine, safranine, and thiazine, *o*-quinonoid structure of (GREEN), A., i, 119.

new blue, of the thiazine series (SCHAPOSCHNIKOFF), A., i, 523.

influence of the orientation of chromophores on the colour and other properties of (REYERDIN and CRÉPEUX), A., i, 701.

methylation of (PRUD'HOMME), A., i, 244, 455.

combination of basic with acidic (SEYEWETZ), A., i, 356.

acidic, composition of, with compounds of magenta (SEYEWETZ), A., i, 522.

having a basic chromophore, compounds of, with magenta (SEYEWETZ), A., i, 645.

sulpho-azo-, compounds of, with magenta (SEYEWETZ), A., i, 614.

new, of acid function (PRUD'HOMME), A., i, 455.

new blue, fast to alkalis (PRUD'HOMME), A., i, 455.

Colouring matters, basic and tanning, Ullmann's tests for (HEINEMANN), A., ii, 380.

precipitation of, by ammonium persulphate (PROSCHER), A., i, 454.

Colouring matters. See also:—

Acacetin.

Alkaramel.

Apigenin.

Apigetrin.

Apiin.

Bilirubin.

Brazilein.

Brazilin.

Chloroglobin.

Chlorophyll.

Genistein.

Hæmatin.

Hæmatoporphyrin.

Hæmatoxylin.

Hæmin.

Hæmochromogen.

Hæmoglobin.

Indigo.

Luteolin.

Myricetin.

Phylloporphyrin.

Phylloxanthin.

Pyocyanin.

Quercetin.

Tetramethylhæmatoxylin.

Trimethylbrazilin.

Urobilin.

Vitexin.

Columbinin, action of dilute acids, alcohol, and heat on (PANORMOFF), A., i, 709.

Columbite group, a mineral of the (GOODWIN and MILLER), A., ii, 662.

Combustion, apparatus for demonstrating the reciprocal nature of (TECLU), A., ii, 71.

Comenic acid, constitution of (PERATONER and LEONARDI), A., i, 550.
diethyl ester (OLIVERI-TORTORICI), A., i, 587.

Compositæ, distribution of alkaloids in (GRESHOFF), A., i, 556.

Conchiolin, decomposition products of (WETZEL), A., i, 71.

Condensation waves, propagation of, in heated gases (LE CHATELIER), A., ii, 645.

Conductivity, electrical. See Electrochemistry.

heat. See Thermochemistry.

Congo-red, cause of the change of colour of, by the action of acids (SCHIMANSKY), A., i, 305.

Conifer-seeds, decomposition products of proteids of (SCHULZE and WINTERSTEIN), A., ii, 101.

Coniine, detection of, in poisoning cases (VITALI and STROPPA), A., ii, 639.

Consolidine and **Consolidin** (GREIMER), A., i, 684.

Copper in plants (MACDOUGAL), A., ii, 235.

electrochemical equivalent of (RICHARDS, COLLINS, and HEIMROD), A., ii, 256.

heat of combination of, with zinc (BAKER), P., 1899, 195; (GALT), A., ii, 189.

solution of, in gelatin solutions (LIDOFF), A., ii, 77.

precipitates in analysis (IMMERWAHR), A., ii, 642.

Copper-ammonium chromate, a new (SCHUYTEN), A., ii, 279.

iodides, reactions of (POZZI-ESCOT), A., ii, 207.

Copper alloys with zinc, negative heat of formation of (BAKER), P., 1899, 195; (GALT), A., ii, 189.

action of, on nitric acid (GLADSTONE), A., ii, 710.

Copper salts, solubility of, in sucrose solutions (STOLLE), A., i, 333.

action of alkali hydroxides and bromine on (VITALI), A., ii, 208.

carbonate (GRÜGER), A., ii, 542.

chloride, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1245; P., 1900, 172.

fluoride, double salts with aluminium fluoride (WEINLAND and KÖPPEN), A., ii, 144.

haloids, double salts with ammonium thiosulphate (ROSENHEIM and STEINHÄUSER), A., ii, 653.

oxide, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1255; P., 1900, 173.

oxides, action of acetylene on (GOOCH and BALDWIN), A., i, 74.

sulphate, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1243; P., 1900, 172.

estimation of the purity of, and of the amount of, in copper pyrites (MONTANARI), A., ii, 315.

estimation of (ZECCHINI), A., ii, 762.

manganese sulphates, solubility of (STORTENBEKER), A., ii, 530.

polysulphide (BODROUX), A., ii, 480.

sulphites and thiosulphate, double, with the alkali metals (ROSENHEIM and STEINHÄUSER), A., ii, 652.

sulphovanadite. See Sulvanite.

thioantimonites and their double salts with potassium (POUGET), A., ii, 84.

Copper:—

Cupric salts, oxidising action of, in presence of cyanogen compounds (SCHAER), A., i, 512; ii, 583.

chloride, solubility of, in organic liquids (OECHSNER DE CONINCK), A., ii, 542.

oxide, hydrated, formation of (MARNOW), A., ii, 402.

sulphate, reaction of solutions of, with magnesium, iron, or zinc (CAVEN), P., 1899, 232; A., ii, 344.

Cuprous chloride, compounds of, with acetylene and potassium chloride (CHAVASTELON), A., i, 470.

compounds of, with carbon monoxide (JONES), A., ii, 17.

Copper organic compounds:—

Cupric methyl- and benzyl-salicylimides (DELÉPINE), A., i, 177.

Cuprous acetylde, compounds of, with cuprous iodide (BERTHELOT and DELÉPINE), A., i, 324.

Copper, detection, estimation, and separation of:—

detection of (CAZENEUVE), A., i, 465; (VITALI), A., ii, 208.

analysis of (CLARK), A., ii, 369; (HOLLARD), A., ii, 442.

estimation of (WILLENZ), A., ii, 315.

estimation of, volumetrically (PARR), A., ii, 762.

estimation of, in cyanide solutions (CLENELL), A., ii, 370.

estimation of, in iron (HERTING), A., ii, 245.

estimation and separation of, by sodium hydroxide and hydrazine sulphate or hydrochloride (JANNASCH and BIEDERMANN), A., ii, 315.

estimation of oxygen in, by ignition in hydrogen (ARCHBUTT), A., ii, 756.

Copper pyrites, estimation of copper sulphate in (MONTANARI), A., ii, 315.

Coprosterol, origin of, in the intestine (MÜLLER), A., ii, 289.

Coral (*Helipora cerulea*), blue pigment of (LIVERSIDGE), A., i, 70.

Corals, iodine in (MENDEL), A., ii, 677.

Cordylite (*barium-parisite*) from Greenland (FLINK), A., ii, 410.

Coriaria myrtifolia, constituents of (PERKIN), T., 428; P., 1900, 45.

Cork oak. See Agricultural Chemistry.

Corn oil. See Maize oil.

Cornutine, estimation of (MUSSET), A., ii, 121.

Corresponding states (MEYER), A., ii, 263; (BERTHELOT), A., ii, 335, 646.

Corrosive sublimate. See Mercuric chloride under Mercury.

- Cortex Lokri*, constituents of (VAN DEN DRIESSEN-MAREEUW), A., ii, 102.
- Corundum** from Eastern Ontario (MILLER), A., ii, 552.
and corundum-bearing rock, composition of (GOODWIN), A., ii, 661.
- Cotarnine** and its derivatives (FREUND and PREUSS), A., i, 248.
formula of (DECKER), A., i, 683.
oxidation products of (WULFF), A., i, 607.
cyanide as a pseudo-salt (HANTZSCH and KALB), A., i, 557.
- ψ -**Cotarnine** and its cyanide (HANTZSCH and KALB), A., i, 115.
- Cotarmethylimine** (WULFF), A., i, 607.
- Cotoin** (HESSE), A., i, 35.
- Cotton-seed oil**, adulteration of, with maize oil (MORPURGO and GÖTZL), A., ii, 377.
Bechi's test for (VAN ENGELN; SOLT-SIEN), A., ii, 116.
Halphen's colour reaction for the identification of (RAIKOW), A., ii, 698.
Bechi and Halphen's colour tests for, in oils (RAIKOW and TSCHERVENIWANOW), A., ii, 252.
estimation of, by Halphen's test (STRZYZOWSKI), A., ii, 325; (OILAR), A., ii, 772.
- Coumarilic acid**, bromo- and chloro- (STOERMER), A., i, 654.
dibromo- (SIMONIS and WENZEL), A., i, 231, 496, 648.
- Coumarin**, preparation and constitution and bromine derivatives of (SIMONIS and WENZEL), A., i, 231, 496, 648.
- Coumarins** (v. PECHMANN; v. PECHMANN and SCHAAL), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- Coumarone** and its polymeride, and chloro-, bromo-, and bromonitro-derivatives (STOERMER), A., i, 650.
bromo-derivatives (SIMONIS and WENZEL), A., i, 232, 497, 648.
- Coumarone resin** (KRAEMER and SPILKER), A., i, 656.
- Coumaroxyacetic acid**, bromo- (STOERMER), A., i, 654.
- Cows**. See Agricultural Chemistry.
- Crackene** from mineral oil (KLAUDY and FINK), A., i, 284.
- Cream**, analysis of (RICHMOND), A., ii, 696.
See also Agricultural Chemistry.
- Creatine** and **Creatinine**, physiological action of (MALLET), A., ii, 156.
- "**Cremonites**," new explosives (ALVISI), A., ii, 205.
- Creosote**, assay of (HALL), A., ii, 580.
wood-tar, estimation of guaiacol in (KEBLER), A., ii, 176.
- o-Cresol**, *tetra-* and *penta-*bromo- (AUWERS and ANSELMINO), A., i, 160.
4-nitro- (HILL, SOCH, and OENSLAGER), A., i, 538.
- m-Cresol*, specific heat and heat of vaporisation of (LUGININ), A., ii, 334.
estimation of, in mixtures of cresols (RASCHIG), A., ii, 694.
- m-Cresol*, *tetrabromo-* (AUWERS and ANSELMINO), A., i, 160.
and its acetyl and benzoyl derivatives (AUWERS and BURROWS), A., i, 99.
- ω :2:4:5:6-*penta*bromo- (AUWERS and ANSELMINO), A., i, 160; (AUWERS and BROICHER), A., i, 162.
- 5:2-bromonitro- (THIELE and EICHWEDE), A., i, 501.
- p-Cresol*, *tribromo-*, product of the action of nitric acid on, and its acetyl derivative (ZINCKE), A., i, 545.
5:3-bromoamino- and 5:3-bromonitro- (THIELE and EICHWEDE), A., i, 501.
- Cresols**, *o*-, *m*-, and *p*-, condensation of, with ethyl phenylpropionate (RUHMANN and BEDDOW), T., 984, 1119; P., 1900, 123, 165.
analysis of mixtures of phenol and (DITZ and CEDIVODA), A., ii, 54; (VAUBEL), A., ii, 112.
estimation of (CLAUSER), A., ii, 319.
- Cresols**, *o*-, *m*-, and *p*-, bromo- and chloro-derivatives, action of nitrous and nitric acids on (ZINCKE), A., i, 545.
- Cresoxy-**. See Tolyloxy-.
- Cresses**. See *Barbarea præcox*, *Lepidium sativum*, and *Nasturtium officinale*.
- Critical** constants of diisopropyl and diisobutyl (YOUNG and FORTY), T., 1126; P., 1900, 165.
of *n*-octane (YOUNG), T., 1145; P., 1900, 166.
density and the law of Cailletet and Mathias (YOUNG), A., ii, 711.
point of pure liquids and mixtures, disturbing influences at the (v. HIRSCH), A., ii, 388.
state (DIETERICI), A., ii, 67.
temperature of complete mixture, influence of pressure on (VAN DER LEE), A., ii, 129.
of organic sulphur compounds (FERRETTO), A., ii, 386.
- Crotonic acid**, mercuri-compound of (LEY), A., i, 382.
ethyl ester, condensation of, with ethyl oxalate (LAPWORTH), P., 1900, 132.

- Crotonic acid**, β -amino-, ethyl ester, action of phenylcarbinide on (BEHREND and MEYER), A., i, 287.
- α - and β -bromo- (MELIKOFF), A., i, 536.
- β -bromoamino- and β -chloroamino-, ethyl ester (BEHREND and SCHREIBER), A., i, 210.
- γ -chloro-, and its nitrile and ethyl ester (LESPIAU), A., i, 425.
- α -cyano-, ethyl ester, β -amino-, and β -alkyloxy derivatives of (HALLER), A., i, 373.
- Cryoscopic** behaviour of nitro-derivatives in formic acid (BRUNI and BERTI), A., ii, 591.
- of substances with constitutions similar to that of the solvent (GARELLI and CAIZOLARI), A., ii, 65.
- observations, apparatus for (BATELLI and STEFANINI), A., ii, 709.
- observations in various solvents (AUWERS), A., ii, 262.
- Cryoscopy**, antimony trichloride as a solvent in (TOLLOCZKO), A., ii, 190.
- of phenols, influence of the solvent on (AUWERS, BARTSCH, and SMITH), A., ii, 66.
- of Tanret's rhamninose and rhamnino-trionic acid (PONSOT), A., i, 333.
- See also Freezing point.
- Crystalline-liquids** (SCHENCK), A., ii, 339.
- Crystallography** and atomic weights (MUTHMANN), A., ii, 533; (LINCK), A., ii, 717.
- of *d*- and *l*-isomarine (POPE), T., 787; P., 1900, 118.
- Crystals**, apparatus for dissolving (HORKINS), A., ii, 71.
- mixed (ROOZEBOOM), A., ii, 64, 70, 132; (VAN EIJK), A., ii, 133; (ADRIANI), A., ii, 462.
- formation and transition of (HISINK), A., ii, 339.
- conversion of, into a compound (ROOZEBOOM), A., ii, 70.
- of mercuric bromide and iodide (REINDERS), A., ii, 70.
- of potassium and thallium nitrates, formation and transition of (VAN EIJK), A., ii, 133.
- Crystal-violet and Crystal-violet leuco-hydroxide salts** (HANTZSCH), A., i, 365.
- ψ -Cumene (1:3:4-triethylbenzene), refraction and magnetirotation of (PERKIN), T., 267; P., 1899, 237.
- ψ -Cumene-diazocyanide, and -diazonium cyanide (HANTZSCH), A., i, 568.
- ψ -Cumenediazohaloids (HANTZSCH), A., i, 568.
- ψ -Cumenesyndiazotate, potassium (HANTZSCH), A., i, 567.
- ψ -Cumenol, sodium derivative, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 394.
- tribromo-, isomeric, constitution, and oxidation products of (AUWERS; AUWERS and EBNER), A., i, 161.
- ψ -Cumenoxypropionacetal (STOERMER), A., i, 653.
- $\alpha\psi$ -Cumenoxypropionic acid and its ethyl ester (BISCHOFF), A., i, 394.
- Cuminuric acid**, ethyl ester (RÜGHEIMER and FEHLHABER), A., i, 610.
- Cuminuroflavin** (*di-p-isopropylhippur-flavin*) and its anilides (RÜGHEIMER and FEHLHABER), A., i, 610.
- Cuminylidenebisdimethyldihydroresorcinol** (VORLÄNDER and STRAUSS), A., i, 100.
- Cuminylidene-2-naphthylamine**, 1-bromo- and 1-chloro-, and their hydrocyanides (MORGAN), T., 1216; P., 1900, 171.
- Cuprene**, formation of (SABATIER and SENDERENS), A., i, 197, 421.
- Cupric and Cuprous**. See under Copper.
- Curangin and Curangaegenin** (BOORSMA), A., i, 243, 304.
- Currents**. See Electrochemistry.
- Cyanamides**, formation of, from the action of cyanogen bromides on tertiary amines (v. BRAUN), A., i, 430, 641.
- combination of, with ethyl or methyl alcohol (STIEGLITZ and McKEE), A., i, 340.
- Cyanogen**, action of, on aromatic amines (MEVES), A., i, 483.
- bromide, action of, on tertiary amines (v. BRAUN), A., i, 430, 641, 687.
- and aluminium chloride, action of, on benzenoid hydrocarbons (SCHOLL and NÖRR), A., i, 386.
- action of, on diethyl- and dimethyl-aniline (SCHOLL and NÖRR), A., i, 435.
- action of, on ethyl acetonedicarboxylate (DERÔME), A., i, 426.
- triselenide (MUTHMANN and SCHRÖDER), A., i, 479.
- Hydrocyanic acid** (*hydrogen cyanide*) in Vicia seeds (BRUNING and VAN HAARST), A., ii, 160.
- preparation of (BROWNING), T., 1235; P., 1900, 172.
- constitution of (WADE), P., 1900, 156.
- dissociation constant of (WALKER and CORMACK), T., 15; P., 1899, 208.

Cyanogen :—

Cyanides, double, electrical conductivity of (WALDEN), A., i, 430.

iso **Cyanic acid**, relation of, to fulminic acid (SCHOLL and KACER), A., i, 218.

iso **Cyanides**, compounds of, with aldehydes and alkyl iodides (WADE), P., 1900, 157.

"Cyanide musk." See Butylxylyl cyanide, *dinitro*.

Cyanomethæmoglobin. See under Hæmoglobin.

p-**Cyantoline** (PIEPES-PORATYŃSKI), A., i, 648.

Cyan-o- and **-m-xylins** (SCHOLL and NÖRR), A., i, 386.

Cyaphenin from benzenylmethylimino-chloride (v. PECHMANN and OBERMILLER), A., i, 294.

Cyclic compounds (KURSAOFF), A., i, 89.

behaviour of, at low temperatures (MARKOWNIKOFF), A., i, 18.

oxidation of (MARKOWNIKOFF), A., i, 475.

Cyclopterine, a new protamine (MORKOWIN), A., i, 72.

Cymene from fir-wood (*Pinus Abies*) (KLASON), A., i, 676.

2-chloro- and 2-bromo- from carvone (KLAGES and KRAITH), A., i, 43.

Cymene (1:4-methylisopropylbenzene) refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.

Cynoglossine (GREIMER), A., i, 683.

Cystin from keratin (MÖRNER), A., i, 128.

detection and estimation of, in well waters (CAUSSE), A., ii, 457, 458.

Cystinuria, excretion of diamines in (CAMMIDGE and GARROD), A., ii, 229.

Cytisine and its alkyl derivatives (RAUWERDA), A., i, 607, 684.

and its physiological action (SCHMIDT; LITTEBSCHIED), A., i, 513.

action of phenylthiocarbimide on (LITTEBSCHIED), A., i, 513, 516.

Cytotoxins (BORDET; CANTACUZÈNE; BESREDKA; METCHNIKOFF; METCHNIKOFF and BESREDKA), A., ii, 741.

D.

Dacite from Sumatra (MILCH), A., ii, 150.

Damascenine and its salts (POMMERHNE), A., i, 684.

from nigella oil (SCHIMMEL and Co.), A., i, 184.

Dammar, examination of (DIETERICH), A., ii, 118.

Datolite from Dartmoor (BUSZ), A., ii, 217.

Datura Stramonium, estimation of the alkaloids of the leaves of (SCHMIDT), A., ii, 379.

Decahydroacridinedione, base, $C_{13}H_{13}O_2N$ from (VORLÄNDER and KALKOW), A., i, 99.

Decane- α -dicarboxylic acid (KOMPPA), A., i, 201.

Decarboxy*dibromocarminic acid* and its acetyl and benzoyl derivatives (LIEBERMANN, HÖRING, and WIEDERMANN), A., i, 236.

Decarbusnic acids, *n*- and *iso*- (WIDMAN), A., i, 347.

Decenoic acids (WALLACH), A., i, 590.

Decoic acids, amino- (WALLACH), A., i, 590.

Decomposition. See under Affinity.

Dehydroacetic acid (COLLIE), T., 971; P., 1900, 147.

action of hydroxylamine on, and its oximes (MINUNNI), A., i, 198.

Dehydrocamphoric acid, formation and oxidation of (LAPWORTH), T., 1056; P., 1900, 128.

Dehydropiperonalphenylhydrazone (MINUNNI), A., i, 260.

Denitrification. See Agricultural Chemistry.

Density of chemical compounds in relation to composition and constitution (KANONNIKOFF), A., ii, 134.

conductivity and surface tension of aqueous solutions containing potassium chloride and sulphate (BARNES), A., ii, 332.

determinations, new pycnometer for (GÜCKEL), A., ii, 193.

of liquids and saturated vapours (v. HIRSCH), A., ii, 9.

of the halogens, nitrogen and oxygen at their boiling points (DRUGMAN and RAMSAY), T., 1228; P., 1900, 172.

of erbium, yttrium, and zirconium (MEYER), A., ii, 143.

of sodium tungstate solutions (PAWLEWSKI), A., ii, 400.

of sulphur perfluoride (MOISSAN and LEBEAU), A., ii, 342.

of tellurium (LENHER and MORGAN), A., ii, 273.

of yttria (MUTHMANN and BÖHM), A., ii, 209.

See also Vapour density.

Deoxybenzoin benzylideneanilines and their hydrochlorides, isomeric (FRANCIS), T., 1191; P., 1900, 169.

- Deoxycaffeine** (5-*oxy*-1:4:6-*trimethyl*-6:7-*dihydropurine*) and its salts (BAILLIE and TAFEL), A., i, 121.
- Deoxymorphine** (SCHRUYER and LEES), T., 1024; P., 1900, 143.
- Deoxytheobromine** (5-*oxy*-1:4-*dimethyl*-6:7-*dihydropurine*) (TAFEL), A., i, 121.
- Derride**, a fish poison, and its anhydride (VAN SILLEVOLDT), A., i, 109.
- Desylacetomesitone** and **Desyl- α - and - β -acetonephthones** (SMITH), A., i, 38.
- Dextran**, formation of, by micro-organisms (BOEKHOUT), A., ii, 742.
- Dextrins**, preparation of (PRIOR and WIEGMANN), A., i, 541.
formation of, from starch, and action of amylase, on (POTTEVIN), A., i, 80.
nomenclature of (SYNIEWSKI), A., i, 79.
of saccharification (PETIT), A., i, 589.
- Dextrins**. See also Achroodextrin and Maltodextrin.
- Dextrose** (d-*glucose*, *grape sugar*) in beet leaves (LINDER), A., ii, 302.
action of potassium persulphate on (MORRELL and CROFTS), T., 1220; P., 1900, 172.
derivatives of (KOENIGS and KNORR), A., i, 588.
phenylosazones of (NEUBERG), A., i, 139.
- Diabase**, weathering of, in Virginia (WATSON), A., ii, 488.
- Diabetes mellitus**, sugar formation in (ROSENQVIST), A., ii, 155.
- Diacetanilide**, 2:6:4-dichloronitro- (CHATTAWAY and ORTON), A., i, 643.
- Diacetone-allyl- and -phenyl-thiocarbamides** and oxime (TRAUBE and LORENZ), A., i, 116.
- Diacetoneamine**, carbamide and guanidine derivatives of (TRAUBE and SCHALL), A., i, 118.
carbamide and thiocarbamide derivatives of (TRAUBE and LORENZ), A., i, 115.
- Diacetoneguanidine** and its acetyl derivative (TRAUBE and SCHWARZ), A., i, 117.
- Diacetonetolythiocarbamide** (TRAUBE and SCHALL), A., i, 118.
- Diacetoxymorphine** (*heroin*), colour test for (KOBERT), A., ii, 121.
- Diacetoxystilbene** (NEF), A., i, 21.
- Diacetoxytetramethylstilbene**, *tetra-bromo-* (AUWERS, TRAUN, and WELDE), A., i, 168.
- Diacetyl**-. See also under Parent Substance.
- Diacetylacetone**, action of methyl iodide on the sodium derivative of, and orcinol derivatives from (COLLIE and STEELE), T., 961; P., 1900, 146.
- 1:7-Diacetylamine-8-naphthol** (KEHRMANN and WOLFF), A., i, 449.
- Diacetylaminophenolsulphonic acid** (COHN), A., i, 29.
- Diacetylanthranilic acid**, methyl ester (ERDMANN), A., i, 188.
- Diacetyldioxime**, compounds of, with certain solvents (PETRENKO-KRITSCHENKO and KASANEZKY), A., i, 350.
- Diacetyl-diphenyl and -ditolyl-ethenylamidines** (TRAUBE and EYME), A., i, 119.
- $\beta\beta$ -Diacetylpropionic acid**, methyl and ethyl esters (MARCH), A., i, 374.
- $\alpha\beta$ -Diacetylpyroterebic acid**, ethyl ester (PAULY and LIECK), A., i, 275.
- Diacetyltartaric acid**, diethyl ester, rotation of (MCCRAE and PATTERSON), T., 1096; P., 1900, 161.
- Diacylamarines**, constitution of (JAPP and MOIR), T., 632; P., 1899, 212.
- iso***Dialdane** (DE BRUYN and BIJL), A., i, 205.
- Dialkylamaronium salts**, constitution of (JAPP and MOIR), T., 615; P., 1899, 212.
- Diallage** from Russia (TARASSENKO), A., ii, 26.
- Diamines**, behaviour of, on neutralisation (BERTHELOT), A., i, 83.
- Diisoamyl*di*bromoamine**, action of silver oxide on (KIJNER), A., i, 629.
- Diamyldisulphoneacetonephthalamic acid**, salts of (POSNER and FAHRENHORST), A., i, 17.
- β -Diamyldisulphonepropyl-carbamide**, and -thiocarbamide (POSNER and FAHRENHORST), A., i, 17.
- Dianiline antimonibromide** (HIGBEE), A., i, 285.
stannibromide (RICHARDSON and ADAMS), A., i, 151.
- Dianilinophenylbenzoquinone** (BORSCHKE), A., i, 594.
- Dianilino-orthophosphoric acid**, and *di-p*-chloro-, and -phosphoryl chloride (AUTENRIETH and RUDOLPH), A., i, 570.
- Dianilinoquinoneanil**, electrolytic preparation of (LÖB), A., i, 464.
- Diantipyrinemethane**. See Formopyrine.
- Diaspartidodiaspartic acid** and its ammonium salts (SCHIFF), A., i, 279.
- Diastase**, decomposition of, during fermentation (HEINZELMANN), A., ii, 230.

- Diastase**, proteolytic, of malt (FERNBACH and HUBERT), A., i, 576.
influence of phosphates and other inorganic compounds on the (FERNBACH and HUBERT), A., i, 516.
- m*-**Diazines**. See Pyrimidines.
- Diazoacetic acid**, ethyl ester, polymerisation products from (HANTZSCH and SILBERRAD), A., i, 261.
- Diazoaminobenzene**, copper derivatives of (MEUNIER and RIGOT), A., i, 316; (MEUNIER), A., i, 571.
- Diazoaminobenzenedi-*p*-sulphonic acid**, isomeric forms of (VAUBEL), A., i, 615.
- Diazoazobenzenetrisulphonic acid**, potassium salt (JUNGAHN and NEUMANN), A., i, 418.
- Diazobenzene**, action of, on *isonitromethane* (BAMBERGER, SCHMIDT, and LEVINSTEIN), A., i, 566.
chloride, action of α -methyltetriconic acid on (WOLFF and HEROLD), A., i, 585.
nitrate from nitrosophenylhydrazine (RÜGHEIMER), A., i, 532.
- Diazobenzenebenzylamine**, *p*-nitro- (WOHL and SCHIFF), A., i, 708.
- Diazobenzenehydrazides** (WOHL and SCHIFF), A., i, 707.
- Diazobenzene-*m*-hydrazinobenzoic acid** (WOHL and SCHIFF), A., i, 708.
- Diazobenzeneimide**, *pentabromo*- (HANTZSCH and SMYTHE), A., i, 316.
- Diazobenzenephenylhydrazide** and its halogen derivatives and their oxidation with permanganate (WOHL and SCHIFF), A., i, 707.
- Diazobenzenepiperidine** and its sulphonic acid, action of bromine on (WALLACH and TEWES), A., i, 265.
- Diazobenzene-*o*-sulphonic acid**. See Benzenediazonium-*o*-sulphonic acid.
- Diazobenzoic acid phenylhydrazide**, *m*- and *p*- (WOHL and SCHIFF), A., i, 708.
- Diazocaffeine** and its derivatives (GOMBERG), A., i, 263.
- Diazo-compounds**, nomenclature of the (HANTZSCH), A., i, 702.
normal, as pseudodiazonium compounds (HANTZSCH), A., i, 126.
- Diazo cyanides** (HANTZSCH), A., i, 567, 569.
- syn***Diazo cyanides**, interaction of, with cuprous compounds (HANTZSCH and BLADEN), A., i, 704.
- Diazocymene nitrate**, nitroso- (OLIVERTORTORICI), A., i, 553.
- Diazo-haloids** and -thiocyanates (HANTZSCH), A., i, 568.
- Diazo hydrazides**, preparation, characteristics, and oxidation of (WOHL and SCHIFF), A., i, 706.
- Diazo hydroxides** (ENGLER and HANTZSCH), A., i, 566.
- Diazo hydroxyaminobenzene** (BAMBERGER and STIEGELMANN), A., i, 193.
- Diazoic acids**. See Nitramines.
- Diazolone disulphides**, *dithio*-, action of methyl iodide on, and decomposition of thiodiazolones (BUSCH and LINGENBRINK), A., i, 413.
- 5-Diazolone-1-propionic acid**, 3-amino-, and 5-thio-, ethyl esters (BAILEY and ACREE), A., i, 530.
- Diazomethane**, action of, on β -aromatic hydroxylamines (BAMBERGER and TSCHIRNER), A., i, 342.
action of, on picryl acetate (v. PECHMANN), A., i, 313.
- anti***Diazonaphthalene salts** (ENGLER), A., i, 568.
- Diazonaphthalene nitrate**, nitroso- (OLIVERTORTORICI), A., i, 553.
- Diazonium** (*benzenediazonium*) salts, constitution of (HANTZSCH), A., i, 126; (BAMBERGER), A., i, 193.
decomposition of (HANTZSCH), A., i, 703.
interaction of, with cuprous compounds (HANTZSCH and BLADEN), A., i, 704.
chloride, action of ethereal acetylanacetates on (FAVREL), A., i, 532.
action of, on alkaline solutions of nitrosophenol (BORSCHKE), A., i, 24, 595.
chlorides, bromo-, transformation of, into chlorodiazonium bromides (HANTZSCH and SMYTHE), A., i, 315.
cyanides (HANTZSCH), A., i, 567.
hydroxides (ENGLER and HANTZSCH), A., i, 566.
nitrate mercurinitrite (HANTZSCH and BLADEN), A., i, 704.
- Diazosalicylic acid** and chloride and sulphonic acid (AUDEN), P., 1899, 231.
- o*-**Diazosalicylic acid** and its reactions (ZAHN), A., i, 549.
- syn***Diazotates** (HANTZSCH), A., i, 567.
from *p*-bromobenzenediazonium-*o*-sulphonic acid (GERILOWSKI), A., i, 706.
- iso***Diazotates**, new method of preparing (BAMBERGER and MÜLLER), A., i, 705.
- Diazotetriconic anhydride** (WOLFF and LÜTTINGHAUS), A., i, 583.
- Diazotetriconosulphonic acid**, salts of (WOLFF and LÜTTINGHAUS), A., i, 584.

- Diazotisation**, velocity of (SCHÜMANN), A., ii, 264.
 elimination of a nitro-group during (MELDOLA and WECHSLER), T., 1172; P., 1900, 167.
- p*-**Diazotoluenephénylhydrazide** and its oxidation with permanganate (WOHL and SCHIEF), A., i, 707.
- p*-**Diazotoluenepiperidide**, action of bromine on (WALLACH and TEWES), A., i, 265.
- Dibenzaldehyde diperoxide** (v. BAEYER and VILLIGER), A., i, 627.
- Dibenzeneazo- β -dinaphtholmethane**, Abel's. See Benzeneazo- β -naphthol.
- Dibenzoyl**-. See also under Parent Substance.
- Dibenzoyl-*s*-dibenzyl-*i*-diphenylethylenediamine** (JAPP and MOIR), T., 608; P., 1899, 211.
- Dibenzoyldiphenylcarbamide** (DINGLINGER), A., i, 503.
- s*-**Dibenzoyl-*i*-diphenylethylenediamine** (JAPP and MOIR), T., 611; P., 1899, 211.
- s*-**Dibenzoylhydrazide** (SILBERRAD), T., 1186; P., 1900, 169; (MINUNNI and CARTA-SATTA), A., i, 252.
 metallic salts of, and conversion of, into azodibenzoyl (STOLLÉ and BENRATH), A., i, 531.
- Dibenzoylmethane** (POND, MAXWELL, and NORMAN), A., i, 102.
 isomeric forms of, and reactions of (WISLICIENUS), A., i, 37.
- Dibenzoylsuccinic acid**, ethyl esters, absorption curves of (HARTLEY and DOBBIE), T., 498; P., 1900, 57.
- Dibenzoyltyrosine** and its salts (SCHULTZE), A., i, 596.
- Dibenzoxo-*o*-benzylideneazine** (MINUNNI and CARTA-SATTA), A., i, 251.
- Dibenzoxystilbene** (NEF), A., i, 21.
- Dibenzyl**, refraction of (CHILESOTTI), A., i, 339.
 sulphide-mercuric iodide (SMILES), T., 164; P., 1899, 240.
- Dibenzyl-acetoacetic and -cyanoacetic acids**, *p*-dicyano-, ethyl esters (MOSES), A., i, 659.
- Dibenzylacetophenone** (NEF), A., i, 349.
- "**Dibenzylamarine**." See Benzoyl-*s*-dibenzyl-*i*-diphenylethylenediamine.
- Dibenzylamine**, *p*-dicyano- (MOSES), A., i, 659.
- Dibenzylbenzylidenehydrazine** and its *di-o*- and *p*-nitro-derivatives (BUSCH and WEISS), A., i, 699.
- Dibenzylcyanamide**, *p*-dibromo-, constitution of (JACKSON and FULLER), A., i, 482.
- Dibenzylidibenzylideneshydratetrazone** (CURTIUS), A., i, 611.
- s*-**Dibenzyl-*i*-diphenylethylenediamine** (JAPP and MOIR), T., 610; P., 1899, 211.
- Dibenzylformal** (DELÉPINE), A., i, 164.
- s*-**Dibenzylhydrazine** and its diacetyl, dibenzoyl, and *d*-nitroso-derivatives (CURTIUS), A., i, 611.
- as*-**Dibenzylhydrazine**, and its *di-o*- and *p*-nitro- and *di-o*-amino-derivatives and their formyl and acetyl derivatives (BUSCH and WEISS), A., i, 699.
- Dibenzylideneacetonehydroxylamine-oximes**, α - and β -, and the α -acetyl and benzoyl derivatives (MINUNNI and CARTA-SATTA), A., i, 237.
- Dibenzylideneacetone-oxime and -phenylhydrazine** (MINUNNI), A., i, 237.
- Dibenzylidenesuccinic acid** and anhydride, transformation of, into their colourless stereoisomerides (STOBBE), A., i, 659.
- Dibenzyl ketone**, condensation of, with benzaldehyde (GOLDSCHMIEDT and KNÖPPER), A., i, 35.
- Dibenzyl ketone benzylideneanilines** and their hydrochlorides, isomeric (FRANCIS), T., 1191; P., 1900, 169.
- Dibenzyllophonium chloride** (JAPP and MOIR), T., 614; P., 1899, 212.
- Dibenzylmalonic acid**, *p*-dicyano-, ethyl ester (MOSES), A., i, 659.
- Dibenzyl- β -naphthylamine**, and the action of formaldehyde on (MORGAN), T., 825; P., 1900, 131.
- Dibenzylsemicarbazide**, *o*-*d*-nitro- (BUSCH and WEISS), A., i, 700.
- Dibornylloxamide** (FORSTER and HARTSMITH), T., 1152; P., 1900, 166.
- Diisobutyl**. See Octane.
- s*-**Diisobutylsuccinic acids**, *cis*- and *trans*-, preparation and dissociation constants of (BONE and SPRANKLING), T., 1299; P., 1900, 184.
- Dicarbonyl cuprous chloride** (JONES), A., ii, 17.
- Di-p*-**carboxybenzylacetic acid** (MOSES), A., i, 659.
- Di-p*-**carboxydibenzylamine hydrochloride** (MOSES), A., i, 659.
- 2,6-Dicarboxyphenol**, 4-nitro-, and its salts (HILL, SOCH, and OENSLAGER), A., i, 539.
- Dichloral peroxide hydrate** (v. BAEYER and VILLIGER), A., i, 627.
- Dicotoin** and ψ -**Dicotoin** (HESSE), A., i, 35.
- Dicoumaryl ketone** (STOERMER), A., i, 655.
- Dicranumtannic acid** (CZAPEK), A., i, 556.

- Dicumyldimethylmethane**, distillation of, under pressure (KRAEMER and SPILKER), A., i, 617.
- Di-2:4-dimethylbenzyl-amine**, and -hydrazine and their derivatives (CURTIUS), A., i, 613.
- Didymium**, yttrium and erbium, microchemical researches on (POZZI-ESCOT and COUQUET), A., ii, 404.
salts, effects of dilution, temperature, etc., on the absorption spectra of solutions of (LIVEING), A., ii, 517.
- Dielectric constant**. See Electrochemistry.
- l-Dierythrosemide** (WOHL), A., i, 140.
- β -Diethothiobutane**, γ -chloro- (POSNER and FAHRENHORST), A., i, 16.
- β -Diethothio-butyric acid** and α -methyl- and α -ethyl-butyric acids and their ethyl esters (POSNER), A., i, 5.
- β -Diethothioglutaric acid** and its diethyl ester (POSNER), A., i, 6.
- 2:4-Diethoxy- α -acetylacetophenone** (BLOCH and v. KOSTANECKI), A., i, 308.
- 2:4'-Diethoxybenzoylacetophenone** (GROSSMANN and v. KOSTANECKI), A., i, 669.
- 2:5-Diethoxy-acetyl- and -benzoyl-acetophenone** (CRIVELLI and v. KOSTANECKI), A., i, 668.
- 3:7-Diethoxychromone** (BLOCH and v. KOSTANECKI), A., i, 308.
- α -Diethoxydiphenyltetrahydropryroxime** and its compounds (PETRENKO-KRITSCHENKO), A., i, 306.
- 2:2'-Diethoxy-flavone** and -flavanone (v. KOSTANECKI and SEIFART), A., i, 668.
- 3:3'-Diethoxyflavone** (v. HARPE and v. KOSTANECKI), A., i, 238.
- 6:3'-Diethoxy-flavone** and -flavanone (BLUMSTEIN and v. KOSTANECKI), A., i, 448.
- β -Diethoxypropionic acid**, methyl ester (WOHL and EMMERICH), A., i, 628.
- Diethoxysuccinic acid**, ethyl potassium salt, electrolysis of (BROWN and BOLAM), A., i, 201.
- Diethyl sulphide-mercuric iodide** (SMILES), T., 164; P., 1899, 240.
- Diethylacetoxime**, chloro- (IPATIEFF), A., i, 14.
- 2'-Diethylaminoanthraquinone**, 5:6-dichloro- (SEVERIN), A., i, 450, 598.
- 2'-Diethylaminobenzoylbenzoic acid**, 3:4-dichloro-, and its esters (SEVERIN), A., i, 598.
- 2'-Diethylaminobenzylbenzoic acid**, 3:4-dichloro- (SEVERIN), A., i, 450, 598.
- p-Diethylaminobenzyl-p-toluidine** (COHN and FISCHER), A., i, 691.
- Diethyldiaminocresol** and its dihydrochloride (FRIEDL), A., i, 593.
- 2:2'-Diethyldiamino-1:1'-dinaphthylmethane**, and its dibenzoyl derivative (MORGAN), T., 827; P., 1900, 131.
- 7-Diethylamino-4-methylcoumarin** and its tribromo-derivative (v. PECHMANN; v. PECHMANN and SCHAAL), A., i, 174.
- p-Diethylaminophenylacetic acid**, its salts and reduction (EINHORN), A., i, 227; (EINHORN and PAPASTAVROS), A., i, 228.
- 4-Diethylaminophenyl- μ -cyanoazomethine-carboxylamide**, -carboxylonitrile, and -phenyl (SACHS), A., i, 362.
- Diethylaniline**, action of cyanogen bromide on (SCHOLL and NÖRR), A., i, 435.
action of thionyl chloride on (MICHAELIS and SCHINDLER), A., i, 215.
- p-Diethylbenzylaminecarboxylic acid**. See p-Diethylaminophenylacetic acid.
- β -Diethyldisulphonoglutamic acid**, ethyl ester (POSNER), A., i, 6.
- α -Diethyldisulphonopropionic acid**, ethyl ester (POSNER), A., i, 5.
- β -Diethyldisulphonopropyl-carbamide**, and -thiocarbamide (POSNER and FAHRENHORST), A., i, 16.
- γ -Diethyldisulphonenevaleric acid** (POSNER), A., i, 6.
- Diethylenediamine** (*piperazine*) and its hydrate (BERTHELOT), A., i, 83.
- Diethylenediaminechromium salts**, di-thiocyano- (PFEIFFER), A., i, 688.
- Diethylenediaminecobalt salts** (WERNER, MÜLLER, KLIEN, and BRÄUNLICH), A., i, 86.
- Diethylenediaminenickel salts** (KURNAKOFF), A., i, 209.
- Diethylenediaminepalladiochloride** (KURNAKOFF and GWOSPAREFF), A., i, 209.
- Diethylenedisulphidethetine** and its salts (STRÖMHOLM), A., i, 12.
- Diethylethylenedisulphone** (POSNER), A., i, 5.
- Diethylhydroxylamine** (LACHMAN), A., i, 380.
- β -Diethylhydroxylamine** and its salts (BEWAD), A., i, 630.
- Diethylketonedithyldisulphone**, chloro- (POSNER and FAHRENHORST), A., i, 17.
- Diethyl- α - and - β -naphthylamines**, and the action of formaldehyde on (MORGAN), T., 823; P., 1900, 131.
- Diethylsulphonedimethylmethane**. See Sulphonal.
- Diethyltetrahydro- β -naphthylamine**, action of formaldehyde on (MORGAN), T., 824.

Diethyluric acid and its salts (ARM-STRONG), A., i, 636.

DIFFUSION :—

Diffusion, theory of (WIEDEBERG), A., ii, 194.

of various substances, influence of animal membrane on the (HEDIN), A., ii, 221.

of a solid into a gas (COLSON), A., ii, 241.

Diffusion velocity and electromotive force, influence of the addition of a salt with one similar ion on (ABEGG and BOSE), A., ii, 127.

Osmotic pressure, definition of (BROWN), A., ii, 194.

simple proof of van't Hoff's law of (IKEDA), A., ii, 391.

extent to which the interaction of ionic charges diminishes (v. TÜRLIN), A., ii, 712.

of concentrated solutions (EWAN), A., ii, 195.

action of increased, on the ovum (BATAILLON), A., ii, 554.

Digestibility of white and whole-meal breads (ROSENHEIM and SCHIDROWITZ), A., ii, 289.

of butter and margarine in the human intestine (LÜHRIG), A., ii, 224, 667.

relative, of certain fats in the human intestine (LÜHRIG), A., ii, 224, 355, 667.

Digestion, influence of "saccharin" on (BERLIOZ), A., ii, 606.

gastric, end products of (PFAUNDLER), A., ii, 666.

peptic (SCHÜTZ and HUPPERT), A., ii, 553.

estimation of products of (EFFRONT), A., ii, 59.

of albumin and fibrin by papain (HARLAY), A., i, 419.

of carbohydrates by *Aplysia* (RÖHMANN), A., ii, 289.

of proteids by pepsin or trypsin, influence of alcohols on (LABORDE), A., ii, 151.

by trypsin, action of arginine on the (LAWROFF), A., ii, 28.

of starch in the stomach of Carnivora (FRIEDENTHAL), A., ii, 224.

in birds (PAIRA-MALL), A., ii, 553.

Digestive juice, bile as a (BRUNO), A., ii, 553.

Dihydroanthracene-2-carboxylic acid, (LIMPRICHT and LACH), A., i, 31.

Dihydroazthiotetride, 2:4-dicyano- and its acetyl derivative; and **Dihydroazthiotetride-4-aminoxime**, 2-cyano- and its acetyl derivatives (HELLSING), A., i, 519.

Dihydrocamphenes (SEMMLER), A., i, 351.

Dihydrocampholenic acid, its nitrile and amide (MAHLA and TIEMANN), A., i, 507.

Dihydrocampholytic acid, β -bromo- (NOYES and PHILLIPS), A., i, 622.

Dihydrocarveol acetate and chloride (KLAGES and KRAITH), A., i, 44.

Dihydrocarvone (KONDAKOFF and LUTSCHININ), A., i, 104.

chloride, physical constants of (KLAGES and KRAITH), A., i, 43.

Dihydrocinchenine, reactions of (KOE-NIGS), A., i, 246.

Dihydrocinnamhydroxamic acid and its acyl derivatives (THIELE and PICKARD), A., i, 30.

Dihydrocumyl alcohol (SEMMLER), A., i, 454.

Dihydrocymene, 2-chloro-, and 2-chloro-bromo- (KLAGES and KRAITH), A., i, 43.

Dihydrodiazotetronic anhydride (WOLFF and LÜTTINGHAUS), A., i, 584.

Dihydrodithiazine derivatives (HELLSING), A., i, 518.

Dihydroeucarveol acetate and chloride (KLAGES and KRAITH), A., i, 43.

Dihydroislaunonamines and their derivatives (BLANC), A., i, 239.

Dihydroislauronic acid, constitution of (BLANC), A., i, 329.

Dihydropyrazine-2:3-diacetic acid, ethyl ester (THOMAS-MAMERT and WEIL), A., i, 459.

Dihydropyridinedicarboxylic acids, substituted, ethyl esters, action of heat on (GUARESCHI and GRANDE), A., i, 112.

Dihydroresorcinol, compounds of, with aldehydes (VORLÄNDER and KALKOW), A., i, 99; (VORLÄNDER and STRAUSS), A., i, 100.

Dihydrotetrazinedicarboxylic acid (HANTZSCH and SILBERRAD), A., i, 262.

Dihydrotetrazines (*bisdiazomethane*) (HANTZSCH and SILBERRAD), A., i, 262.

Dihydroxamic acid, imino- (BAMBERGER and MÜLLER), A., i, 145.

Dihydroxybenzilozone, *tetrabromo-* (BILTZ), A., i, 663.

3:4-Dihydroxybenzoic acid. See *Protocatechuic acid*.

2-mp-Dihydroxybenzylidene-5-methoxy-7-methyl-1:3-diketohydrindene-4-carboxylic acid, methyl ester (LANDAU), A., i, 662.

Dihydroxybutanetetra-carboxylic acid, and its δ -lactone (LEAN), T., 104, 108; P., 1899, 197.

- Dihydroxy-crackene** (KLAUDY and FINK), A., i, 284.
- Dihydroxydiazobenzene**, dinitro-dicyano-, and its salts and their reduction (NIETZKI and PETRI), A., i, 486.
- p*-**Dihydroxydimesityl ether**, tetrabromo-, its diacetate and dimethyl derivative (AUWERS and TRAUN), A., i, 168.
- αγ*-**Dihydroxy- $\alpha\beta$ -dimethylpropane** (pentaglycol:1:2-dimethylpropan-1:3-diol), and its diacetyl derivative (SCHMALZHOFFER), A., i, 626.
- αγ*-**Dihydroxy- $\beta\beta$ -dimethylpropane** (pentaglycol: $\beta\beta$ -dimethylpropan-1:3-diol), action of sulphuric acid on (FISCHER and WINTER), A., i, 472.
- 2:5-Dihydroxydiphenyl** (BORSCHKE), A., i, 594.
- Dihydroxydiphenylmethane-2:4-dicarboxylic acid** (LIMPRICHT and LACH), A., i, 32.
- 2:2'-Dihydroxyflavone** and its diacetyl derivative (v. KOSTANECKI and SEIFERT), A., i, 668.
- 3:3'-Dihydroxyflavone** and its diacetyl derivative (v. HARPE and v. KOSTANECKI), A., i, 237.
- 6:3'-Dihydroxyflavone** and its diacetyl derivative (BLUMSTEIN and v. KOSTANECKI), A., i, 448.
- Dihydroxylamine derivatives**, non-existence of (DIVERS and HAGA), T., 437; P., 1900, 54.
- Dihydroxylaminesulphonates**, non-existence of (DIVERS and HAGA), T., 437; P., 1900, 54.
- 3:5-Dihydroxyanisole hydrochloride**, 2:4-diamino- and its tetraacetyl derivative (WEIDEL and POLLAK), A., i, 290.
- 2:7-Dihydroxy-8-methoxy-3-*o*-methoxyphenylquinoline** (PSCHORR), A., i, 234.
- 4:7(?) Dihydroxy-2-methylquinoline** and its diacetyl derivative (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- Dihydroxynaphthalene**, 1:2- and 1:4, derivatives of (RUSSIG), A., i, 601.
- 1:2-Dihydroxynaphthalene-3-carboxylic acid** and its diacetyl derivative (RUSSIG), A., i, 602.
- 1:4-Dihydroxynaphthalene-2-carboxylic acid** and its acetyl derivative (RUSSIG), A., i, 601.
- Dihydroxy- β -naphthaquinone**. See Naphthazarin.
- 3:4-Dihydroxyphenanthrene**. See Morphol.
- p*-**Dihydroxyphthalimide** (THIELE and MEISENHEIMER), A., i, 299.
- 2:6-Dihydroxypyridine-4-carboxylic acid**. See Citrazinic acid.
- 2:6-Dihydroxypyridine-3:4-dicarboxylic acid**, ethyl ester (RUHEMANN and STAPLETON), T., 243; P., 1900, 12.
- 2:6-Dihydroxypyrimidine**, 4-*mono*- and 4:5-*di*-amino- (TRAUBE), A., i, 416.
- Dihydroxystearic acid**, action of fused potash on (LE SUEUR), P., 1900, 91.
- 3:5-Dihydroxytoluene**. See Orcinol.
- Dihydroxytrimelic acid** (resorcinol-1:3:5-tricarboxylic acid), and its esters (ERRERA), A., i, 34.
- Dihydroxy-*o*-xylene**, tribromo-, and its acetyl derivatives (AUWERS and ERGEGELT), A., i, 98.
- Dihydroxy-*m*-xyloquinone** (BRUNN-MAYR), A., i, 292.
- Diindone-acetic acid**, -acetone, -aceto-phenone, and -benzoylacetone (SCHLOSSBERG), A., i, 665.
- Diindone-cyanoacetic acid** and -malono-nitrile (SCHLOSSBERG), A., i, 666.
- Diketobutyrolactone**, osazone, phenyl-hydrazone, and phenylhydrazoxime of (WOLFF and LÜTTRINGHAUS), A., i, 584.
- 1:3-Dikohydrindene** and its nitrosite (SCHMIDT), A., i, 299.
- Diketones**, electro-synthesis of (HOFER), A., i, 275.
- α*-**Diketones**, conversion of ketones into (PONZIO), A., i, 588.
- β*-**Diketones**, cyclic (LESER), A., i, 430. halogen-substituted indone derivatives of (LANSER and WIEDEMANN), A., i, 666. halogen-substituted *α*-naphthaquinolyl derivatives of (MICHEL), A., i, 669. halogen-substituted *β*-naphthaquinolyl derivatives of (HIRSCH), A., i, 670.
- 2:5-Diketotetrahydrothiazole** (WHEELER and BARNES), A., i, 565.
- α*-**Diketoximes**, characterisation of, by their diacetyl derivatives (PONZIO), A., i, 588.
- Di-2:6-lutidyl-4 sulphone** (MARCKWALD, KLEMM, and TRABERT), A., i, 457.
- Dilution law**. See Affinity.
- Dimethylamine** and its nitrosoamine (KIJNER), A., i, 279.
- Dimesityl**. See *s*-Tetramethyldibenzyl.
- Dimesityliodonium hydroxide** and salts (WILLGERODT and ROGGATZ), A., i, 432.
- 3:5-Dimethoxybenzoic acid**, ethyl ester, nitro- and amino- (EINHORN), A., i, 441.
- 3:5-Dimethoxycarbonyl-2-aminophenol** (WEIDEL and POLLAK), A., i, 290.
- o*-**Dimethoxydiphenyltetrahydropyrone-oxime** and its compounds (PETRENKO-KRITSCHENKO), A., i, 306.
- 2:6-Dimethoxy-4-methylpyrimidine** (GABRIEL and COLMAN), A., i, 53.

- 1:4-Dimethoxynaphthalene** (RUSSIG), A., i, 602.
- 2:3-Dimethoxyphenanthraquinone** and its *di*bromo-derivative (PSCHORR and BUCKOW), A., i, 489.
- 2:3-Dimethoxyphenanthrene**, synthesis of, and its *di*bromo-derivative and **9-carboxylic acid** (PSCHORR and BUCKOW), A., i, 489.
- 3:4-Dimethoxyphenanthrene**, synthesis of, and its **9-carboxylic acid** (PSCHORR and SUMULEANU), A., i, 487.
identity of, with dimethylmorphol (VONGERICHTEEN), A., i, 488.
- 3:5-Dimethoxyphenol** hydrochloride, 2- and 4-amino- (WEIDEL and POLLAK), A., i, 290.
- 5:6-Dimethoxy-2-phenyl-1-carbostyryl** (PSCHORR and BUCKOW), A., i, 489.
- 7:8-Dimethoxy-2-phenylcarbostyryl** (PSCHORR and SUMULEANU), A., i, 487.
- o-Dimethoxyphthalic acid**. See *Meta*-hemipinic acid under Hemipinic acid.
- 3:5-Dimethoxy-o- and -p-quinoneoximes** (WEIDEL and POLLAK), A., i, 290.
- 3:4-Dimethoxystilbene**, 2-nitro- (PSCHORR and SUMULEANU), A., i, 487.
- Dimethyl sulphate**, alkylation by means of (ULLMANN and WENNER), A., i, 619.
sulphide-mercuric iodide (SMILES), T., 164; P., 1899, 240.
- Dimethylacetalysulphine iodide** and platinichloride (STRÖMHOLM), A., i, 326.
- Dimethylacetoacetic acid**, ethyl ester, hydrolysis of (GOLDSCHMIDT and OSLAN), A., i, 373.
- Dimethylacetylacetonitrile** (HENRY), A., i, 538.
- Dimethylacridinium hydroxide** (HANTZSCH and KALB), A., i, 114.
- Dimethylallylcarbinol**, hydrocarbon, C₆H₁₀, from (LUBARSKY), A., i, 422.
- Dimethylallylmalonic acid**, ethyl ester, nitroso of (IPATIEFF), A., i, 3.
- "**Dimethylamarine**." See Benzoyl-*s*-dimethyl-*i*-diphenylethylenediamine.
- Dimethylamine cadmium haloids** (RAGLAND), A., i, 141.
hydrochloride and hydrobromide, compounds of, with tellurium halogen salts (NORRIS and MOMMERS), A., ii, 537.
tin haloids (COOK), A., i, 142.
- 2-Dimethylaminoanthraquinone**, 5:6-*dichloro*- (SEVERIN), A., i, 450, 598.
- Dimethylaminobenzene-6-azoquinoline** (KNUEPPEL), A., i, 188.
- 2'-Dimethylaminobenzoylbenzoic acid**, 3:4-*dichloro*-, and its esters (SEVERIN), A., i, 296, 445, 450.
- 2'-Dimethylaminobenzylbenzoic acid**, 3:4-*dichloro*- (SEVERIN), A., i, 445, 450.
- p-Dimethylaminobenzyl-p-toluidine** (COHN and FISCHER), A., i, 690.
- Dimethyldiaminochlorophenazine** (COHN and FISCHER), A., i, 459.
- Dimethylaminodimethylpyrazolone**. See Pyramidone.
- 4'-Dimethylaminodiphenylmethane**, 4-amino- (COHN and FISCHER), A., i, 691.
- 3-Dimethylaminoflavinduline salts**, 2-amino- (KEHRMANN and STOFFEL), A., i, 254.
- 7-Dimethylamino-4-methylcoumarin and -3-ethylcoumarin** (v. PECHMANN; v. PECHMANN and SCHAAL), A., i, 173.
- 6-Dimethylamino-3-methyl-coumarone and -coumarilic acid** (v. PECHMANN; v. PECHMANN and SCHAAL), A., i, 173.
- 4-Dimethylaminophenyl-4-mono- and -2:4'-di-amino-*m*-tolylmethane** (COHN and FISCHER), A., i, 691.
- 4-Dimethylaminophenyl- μ -cyanoazomethine-carboxylamide, and -carb-oxylonitrile** (SACHS), A., i, 362.
- 9-Dimethylamino-7-phenyl-naphthaphen-azonium salts**, 10-amino- (KEHRMANN and VALENCIEN), A., i, 255.
- Dimethylaminophenyl-methyl- and ethyl-sulphones** (MICHAELIS and SCHINDLER), A., i, 215.
- $\alpha\alpha$ -Dimethyl- α -*iso*amylsuccinic acid**, preparation and dissociation constant of (BONE and SPRANKLING), T., 1306; P., 1900, 184.
- Dimethylaniline**, action of cyanogen bromide on (SCHOLL and NÖRR), A., i, 435.
action of methyl chloroacetate on (CENSI), A., i, 363.
nitration of (VAN ROMBURGH), A., i, 214.
action of thionyl chloride on (MICHAELIS and SCHINDLER), A., i, 215.
stannochloride (RICHARDSON and ADAMS), A., i, 151.
- Dimethylaniline**, nitroso-, compound of, with tetramethyldiaminodiphenylmethanesulphone (SACHS), A., i, 362.
- o-Dimethyl-anthranol and -anthraquinone** (LIMPRICHT), A., i, 599.
- 2:4-Dimethylbenzaldazine** and its reduction (CURTIUS), A., i, 612.
- Di-p-methylbenzylamine** and its salts (CURTIUS), A., i, 611.
- o-Dimethyl-o-benzylbenzoic acid** (LIMPRICHT), A., i, 599.
- Di-p-methylbenzyl-di-p-methylbenzyl-idenehydrotetrazone** (CURTIUS), A., i, 612.

- s*-**Di-*p*-methylbenzylhydrazine** and its derivatives (CURTIUS), A., i, 612.
- Dimethyl-*di*-bromo- and -chloro-methylsulphines** and their salts (STRÖMHOLM), A., i, 14.
- $\beta\beta$ -Dimethylbutane.** See Hexane.
- Dimethylbutanetricarboxylic acid**, ethyl ester, action of sodium and methyl iodide on (PERKIN and THORPE), P., 1900, 152.
- 1:3-Dimethyl-5-butylbenzene.** See Butylxylene.
- $\alpha\alpha$ -Dimethyl- α_1 -isobutylsuccinic acid**, and its α' -cyano-derivative (LAWRENCE), P., 1900, 155.
preparation and dissociation constant of (BONE and SPRANKLING), T., 1304; P., 1900, 184.
- Dimethylcoumarones**, isomeric (STOERMER), A., i, 651.
- α -Dimethylisocrotonic acid** (*2-dimethyl-3-butinoic acid*) (BOUVEAULT), A., i, 131.
- Dimethyldiacetylacetone** (COLLIE and STEELE), T., 961; P., 1900, 146.
- Dimethyldihydropyridinedicarboxylic acid**, ethyl ester, action of heat on (GUARESCHI and GRANDE), A., i, 113.
- Dimethyldihydro-1:2:3:4-tetrazine.** See Dimethylsotetrazine.
- s*-3:6-Dimethyldihydro-1:2:4:5-tetrazine** and the action of heat and of benzoic chloride on (SILBERRAD), T., 1185; P., 1900, 169.
- Dimethylene-galactonic and -xylonic acids** (CLOWES and TOLLENS), A., i, 205.
- Dimethyleneimine** (MARCKWALD), A., i, 336.
- Dimethyl-3- and -2-ethylindolenines**, 1:3- and 2:3-, action of methyl iodide on (PLANCHER), A., i, 560.
- 1:3-Dimethyl-3-ethyl-2-methylenindoline** and its hydriodide (PLANCHER), A., i, 561.
- $\alpha\alpha$ -Dimethyl- α_1 -ethylsuccinic acid**, preparation and dissociation constant of (BONE and SPRANKLING), T., 1305; P., 1900, 184.
- Dimethylethylsulphine iodide** (STRÖMHOLM), A., i, 326.
iodide mercuric iodide (SMILES), T., 162, 167; P., 1899, 240.
- Dimethylfulvene** (THIELE), A., i, 299.
- Dimethylfumaric acid** (*butylenedicarboxylic acid*), from dimethylmaleic anhydride (MOLINARI), A., i, 374.
- $\alpha\alpha$ -Dimethylglutaconic acid** (*pentylenedicarboxylic acid*), synthesis of (CONRAD), A., i, 475.
- $\alpha\beta$ -Dimethylglutolactonic acids**, *cis*- and *trans*-, and their nitriles (BLAISE), A., i, 474.
- $\alpha\alpha'$ -Dimethylglutaric acids** (*pentanedicarboxylic acids*) (THORPE), T., 933; (HOWLES, THORPE, UDALL, and NEALE), T., 948; P., 1900, 116.
- $\beta\beta$ -Dimethylglutaric acid** (*pentanedicarboxylic acid*), $\alpha\alpha'$ -dibromo-, ethyl ester, condensation of, with ethyl sodiomalonate (PERKIN, THORPE, and WALKER), P., 1900, 149.
- Dimethylcyclohexanecarboxylic acid** (*hexahydroxylic acid*) and its isomeride (LEES and PERKIN), P., 1900, 20.
- $\gamma\delta$ -Dimethyl- β -hexenoic acid** (*octenoic acid*) and its ethyl ester (BLAISE), A., i, 330.
- Dimethylhippuroflavin.** See Toluuroflavin.
- 1:1-Dimethyl-2-methylenepyrrolidinium hydroxide and salts** (WILLSTÄTTER), A., i, 249.
- Dimethylmorphol.** See 3:4-Dimethoxyphenanthrene.
- Dimethyl- α - and - β -naphthylamines** and the action of formaldehyde on (MORGAN); T., 822; P., 1900, 131.
- $\beta\zeta$ -Dimethyloctane- ϵ -olide** and its isomeride (V. BAEYER and SEUFFERT; V. BAEYER and VILLIGER), A., i, 132, 133.
- Dimethylol-5-methylacridine** (KOENIGS), A., i, 190.
- Dimethylsotetrazine** (*dimethyldihydro-1:2:3:4-tetrazine*), and its benzoyl derivatives (V. PECHMANN and BAUER), A., i, 314.
- $\beta\delta$ -Dimethyl- $\beta\delta$ -pentadiene.** See Heptiene.
- $\beta\beta$ -Dimethylpentane.** See Heptane.
- Dimethylphenomorpholone** (BISCHOFF), A., i, 346.
- Dimethylphenonaphthacridinium salts**, amino- ("aminodimethylnaphthacridinium" salts) (ULLMANN and NAEF), A., i, 689.
- Dimethyl-1:2:3:5-phenetrol**, preparation of, and its tetracetyl derivative (BRUNNMAYR), A., i, 291.
- Dimethylphloroglucinol**, bromo-, and its triacetyl derivative (HERZIG, POLLAK, and ROHM), A., i, 595.
nitroso-, and amino- and its pentacetyl derivative (BRUNNMAYR), A., i, 292.
- 1:1-Dimethylpiperidine**, action of halogens on (WILLSTÄTTER), A., i, 249.
- 2:4-Dimethylpiperidine** (*2:4-lupetidine*), decomposition of, into its optical isomerides (ENGELS), A., i, 406.
- Dimethylpropanediol.** See Dihydroxydimethylpropane.
- 4:4-Dimethyl-5-isopropylpyrazoline**, and its acetyl and benzoyl derivatives (FRANKE), A., i, 212.

- αα*-Dimethyl-*α*₁-*n*- and -*iso*-propylsuccinic acids**, preparation and dissociation constant of (BONE and SPRANKLING), T., 1305; P., 1900, 184.
- 2:5-Dimethylpyrazine**, absorption spectrum of (HARTLEY and DOBBIE), T., 846; P., 1900, 129.
- 2:6-Dimethylpyridine** (*lutidine*), 3:5-diamino- (MOHR), A., i, 409.
3-chloro- and 3-bromo-, and their salts (BOCCHI), A., i, 357.
- 2:6-Dimethylpyridine-3:5-dicarboxylic acid**, diethyl ester, conversion of, into 3:5-diaminolutidine (MOHR), A., i, 409.
- 2:6-Dimethylpyridyl 4-mercaptan**, 4-methosulphide, sulphides, and acetonyl sulphide and its oxime (MARCKWALD, KLEMM, and TRABERT), A., i, 457.
- 2:6-Dimethylpyridyl-4-methylsulphone**, and -4-sulphonic acid (MARCKWALD, KLEMM, and TRABERT), A., i, 457.
- Dimethylpyrone**, action of sodium ethoxide on (COLLIE and STEELE), T., 970; P., 1900, 146.
action of iodine on the barium and sodium salts of, and its periodide (COLLIE and STEELE), T., 1114; P., 1900, 164.
- Dimethylpyrnedicarboxylic acid**, ethyl ester, reduction of, and the action of semicarbazide on (OLIVERI-TORTORICI), A., i, 552.
- Dimethylpyrrolines**, action of bromoform and chloroform on (BOCCHI), A., i, 357.
- Dimethylstyrene**, 2:4- and 2:5-, *αβ*-dichloro- (KUNCKELL and GOTSCH), A., i, 639.
- αα*-**Dimethylsuccinic acid** and anhydride (PERKIN, THORPE, and WALKER), P., 1900, 149.
- αα*-Dimethylsuccinic acids**, preparation and dissociation constants of (BONE and SPRANKLING), T., 1204; P., 1900, 184.
- Dimethyltetroxan**, hexabromo- (PINNER), A., i, 427.
- αα*-**Dimethylthionine** and its salts (SCHAPOSCHNIKOFF), A., i, 524.
- Dimethyltolueneazammonium silver iodide** (ROSER), A., i, 51.
- 3:5-Dimethyl-1:2:4-triazole**, synthesis of, and its hydrochloride and nitrate (SILBERRAD), T., 1187; P., 1900, 169.
- αα*-Dimethyltricarballic acid**, and the ethyl ester of the *β*-cyano-derivative, synthesis of (HALLER and BLANC), A., i, 475.
- 4-Dimethyltrimethylenedicarbonimide**, 3:5-dicyano- (GUARESCHI and GRANDE), A., i, 111.
- Dimethyltrioxin**, hexabromo- (PINNER), A., i, 427.
- β*-Dimethyluracil** (BEHREND and DIETRICH), A., i, 120; (BEHREND), A., i, 287.
- Dimethylvinylideneoxanilide** (v. PECHMANN and ANSEL), A., i, 287.
- Dimethylxylydines**, isomeric, methiodides of (FISCHER and WINDAUS), A., i, 224.
- Dimorphism** of cyanocamphor and its chloro- and bromo-derivatives (LAPWORTH), T., 1059; P., 1900, 128.
- Dimorphous substances**, monotropic, determination of the transition temperature of (SCHENCK), A., ii, 465.
- Dinaphthantracene**, C₂₂H₁₄ (RUSSIG), A., i, 602.
- β*-Dinaphtholmethane**, *d*-nitroso-, Abel's. See *β*-Naphthol, *α*-nitroso-.
- αα*-**Dinaphthoxyethane** (FOSSE), A., i, 298.
- 1:1'-Dinaphthyl**, 4:4'-*di*iodo-, and its reactions (WILLGERODT and SCHLÖSSER), A., i, 282.
- α*-**Dinaphthylbenzidine**, action of tetramethyladaminobenzophenone on (MERZ and STRASSER), A., i, 314.
- s*-**Dinaphthylcarbamides**, *α*- and *β*- (VITENET), A., i, 153.
- ββ*-Dinaphthylcarbazine** (CAZENEUVE and MOREAU), A., i, 196.
- Dinaphthyl-*m*- and -*p*-phenylenediamines**, *α*- and *αβ*- (MERZ and STRASSER), A., i, 253.
- Diocetylamine** and its nitroso-compound (KJNER), A., i, 278.
- Dionine**. See Morphine ethyl ether.
- 2:6-Dioxy-4-dimethylpiperidine** and its derivatives (GUARESCHI and GRANDE), A., i, 112.
- 2:6-Dioxy-4-methyl-4-hexylpiperidine**, and its derivatives (GUARESCHI and GRANDE), A., i, 112.
- 2:6-Dioxy-4-methyl-4-*n*- and -*iso*-propylpiperidines** (*ββ*-methyl-*n*- and -*iso*-propylglutarimides), 3:5-dicyano- and their salts and derivatives (MINOZZI), A., i, 407.
- 2:5-Dioxy-4-methylpurine**, 7-amino-, and 7-chloro-, and their derivatives (FISCHER and ACH), A., i, 64.
- Diphenacetyl tartaric acid**, diethyl ester, rotation of (MCCRAE and PATTERSON), T., 1096; P., 1900, 161.
- Diphenacylacetic acid**, *γ*-lactone of (KLOBB), A., i, 406.
- s*-**Diphenethylcarbamide** (THIELE and PICKARD), A., i, 30.
- Di-*p*-phenetidinophosphoric acid** (AUTENRIETH and RUDOLPH), A., i, 570.
- Diphenetyl isothiocarbamide**, acyl derivatives (HUGERSHOFF), A., i, 156.
- αα*-**Diphenoxyethane** (FOSSE), A., i, 298.

- as*-Diphenoxysuccinic acid, ethyl ester (RUHEMANN and BEDDOW), T., 1121; (RUHEMANN and STAPLETON), T., 1183; P., 1900, 168.
- Diphenyl (PELLEGRIN), A., i, 151.
- Diphenylamine sulphoxide, *p*-nitro- (SCHAPOSCHNIKOFF), A., i, 523.
- Diphenylamine, triamino-, benzylidene derivatives of (GRONEBERG), A., i, 260.
- Diphenylamine-mono- and -di-sulphonic acids (GNEHM and WERDENBERG), A., i, 93.
- Diphenylazoethylenetrimethylenediamine (ESCH and MARCKWALD), A., i, 336.
- 3:4-Diphenyl-2:4- Δ^2 -benzazoxazine and its nitro-derivatives (WERNER and HERBERGER), A., i, 58.
- 2:6-Diphenylbenzo-quinol and -quinone (BORSCHÉ), A., i, 25, 594; (HILL), A., i, 392; (HILL, SOCH, and OENSLAGER), A., i, 538.
- γ -Diphenyl- α -benzylideneitaconic acid, transformation of, into colourless stereoisomerides (STOBBE), A., i, 660.
- α -Diphenylbutenylamidine (DAINS), A., i, 391.
- Diphenylcarbamide (*carbanilide*), thio-, action of hydrazine on (BUSCH), A., i, 27; (BUSCH and BAUER), A., i, 414.
- Diphenylcarbazide (CAZENEUVE and MOREAU), A., i, 196.
as a sensitive reagent for metals (CAZENEUVE), A., ii, 627.
- Diphenylcarbazone, tinctorial properties of (CAZENEUVE and SISLEY), A., i, 701.
metallic compounds of (CAZENEUVE), A., i, 465.
- Diphenylcyanamide, action of ammonia on (v. BRAUN), A., i, 643.
- Diphenyldiazoxole, preparation and isolation of (SILBERRAD), T., 1188; P., 1900, 169.
- 2:5-Diphenyldiethylenetetrahydropyrone-3-carboxylic acid and its derivatives (COEN), A., i, 307.
- 3:3:6-Diphenyldihydrotetrazine (SILBERRAD), T., 1188; P., 1900, 169.
- Diphenyldiketopiperazine, formation of, and indigotin from (KUHARA and CHIKASHIGE), A., i, 560.
- Diphenyldimethylcarbazide (CAZENEUVE and MOREAU), A., i, 196.
- Diphenyl-dimethyl- and -dibenzyl-tetrazones (McPHERSON), A., i, 124.
- o*-Diphenylene oxide, 3:5-dinitro- (*di-nitrophenoxozone*) (HILLYER), A., i, 289.
- Di-*m*-phenylenediethene(?) (PELLEGRIN), A., i, 151.
- s*-Diphenylethylene. See Stilbene.
- Diphenylethylenediamine, its nitro-derivatives, nitrate and mercurichloride (MILLS), T., 1020; P., 1900, 127.
- die*cyclo- (TRAUBE and v. WEDELSTÄDT), A., i, 390.
- i*-Diphenylethylenediamine (m. p. 120–121°), action of nitrous acid on (JAPP and MOIR), T., 642.
- 2:5-Diphenylethylenetetrahydropyrone-3-carboxylic acid (COEN), A., i, 307.
- Diphenylethylisothiocarbamide, its acetyl and benzoyl derivative and additive compound with acetic anhydride (DAINS), A., i, 391.
- Diphenylfulvene (THIELE), A., i, 299.
- Diphenylfurfuran (AMEYE), A., i, 35.
- Diphenylguanidine, amino-, reactions of (BUSCH and BAUER), A., i, 414.
p-chloroamino- (BUSCH), A., i, 27.
- Diphenyl-*o*-hydroxybenzylidenehydrazine (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- Diphenylimine, iminothio-, compounds of, with amines (SCHAPOSCHNIKOFF), A., i, 523.
- 2:3-Diphenyl-5-mesityl-furfuran and -pyrrole (SMITH), A., i, 39.
- Diphenylmethane derivatives, preparation of (COHN), A., i, 608.
hydrogenised derivatives (VORLÄNDER), A., i, 99.
- Diphenylmethane, *p*-cyano-, and Diphenylmethane-*p*-carboxylic acid (MOSES), A., i, 659.
3:3'-dinitro-4:4'-diamino-, and 3:4:3':4'-tetramino- (MEYER and ROHMER), A., i, 222.
- Diphenylmethane-2:4'-dicarboxylic acid (LIMPRICHT and LACH), A., i, 31.
- Diphenylmethane diphenyl and ditolyl diketone (LIMPRICHT and LACH), A., i, 31.
- Diphenylmethylenedihydroxylamine, and *di-p*-chloro- and -bromo- (BAMBERGER), A., i, 341.
- Diphenylmethyloxide (AUGER), A., i, 594.
- 2:3-Diphenyl-5- α -naphthyl-furfuran, -pyrrole, and -thiophen (SMITH), A., i, 38.
- Diphenyl-*o*-, -*m*-, and -*p*-nitrobenzylidenehydrazines (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- Diphenylcloxyhydro-xanthenedione (VORLÄNDER and KALKOW), A., i, 100.
- 3:5-Diphenylisooxazole and its oxime (WISLICENUS), A., i, 38.
- 1:2-Diphenyl-4-phenacylpyrrolone and its polymeride (KLOBB), A., i, 406.
- 2:6-Diphenylphenol, 4-nitro-, its potassium derivative, and methyl ether (HILL, SOCH, and OENSLAGER), A., i, 538.

- 2:6-Diphenylphenol**, 4-nitro- and 4-amino- (HILL, A., i, 392; (HILL, SOCH, and OENSLAGER), A., i, 538.
- Diphenylphthalide**, *dithio*- (MEYER; MEYER and SZANECKI), A., i, 660.
- 35-Diphenylpyrazole** (WISLICENUS), A., i, 38.
- Diphenylpyrimidone** (RUHEMANN and STAPLETON), T., 239; P., 1900, 11.
- Diphenyl-quinol** and **-quinone**. See Diphenylbenzo-quinol and -quinone.
- 1:2-Diphenyltetrahydro- β -naphthenone** and its oxime (GOLDSCHMIEDT and KNÖPFER), A., i, 35.
- Diphenyltetrahydropyruonedicarboxylic acid**, ethyl esters, isomeric, and their methyl derivatives (PETRENKO-KRITSCHENKO and ELTCHANINOFF), A., i, 307.
- Diphenyltetrahydropyroneoxime** and its compounds and benzoyl derivative (PETRENKO-KRITSCHENKO), A., i, 307.
- Diphenyltetrazonium chloride**, action of acylcyanoacetic esters on (FAVREL), A., i, 532.
- Diphenylisothiocarbamide**, acyl derivatives (HUGERSHOFF), A., i, 156.
- Diphenylthiosemicarbazide**, action of chloroacetic acid on (V. WALTHER and STENZ), A., i, 569.
- Diphenylsuccinic acid**, *dithio*-, ethyl ester (RUHEMANN and STAPLETON), T., 1183; P., 1900, 168.
- 3:5-Diphenyl-1:2:4-triazole**, preparation and isolation of (SILBERRAD), T., 1188; P., 1900, 169.
- Diphthalylic acid** (GRAEBE and HÖNIGSBERGER), A., i, 506.
- Diphtheritic paralysis** and antitoxin (RAINY; RANSOM), A., ii, 557.
- Dipiperonaldiphenylhydrotetrazone** and its isomeric transformations (MINUNNI), A., i, 259.
- Diisopropyl**. See Hexane.
- Diisopropyl diketone** (PONZIO), A., i, 588.
- Di-*p*-isopropylhippuroflavin**. See Cuminuroflavin.
- Dipropylhydroxylamine**, reactions of (MAMLOCK and WOLFFENSTEIN), A., i, 209.
- β -Dipropylhydroxylamine** and its salts (BEWAD), A., i, 630.
- s-Di-*n*- and -*iso*-propylsuccinic acids**, *cis*- and *trans*- (*octanedicarboxylic acids*), preparation and properties of (BONE and SPRANKLING), T., 654; P., 1900, 71.
- 5-Dipyrzylethane** and its dicarboxylic acid and ester (GRAY), A., i, 376.
- Disease**, behaviour of bacteriological enzymes in (EMMERICH and LÖW), A., ii, 159.
- Dispersion**. See Photochemistry.
- Dissociation** and dissociation equilibrium of highly dissociated electrolytes (JAHN), A., ii, 522, 707.
- relation between taste and, of acid salts (KAHLENBERG), A., ii, 270, 646; (RICHARDS), A., ii, 391.
- in dilute solutions at 0° (WHETHAM), A., ii, 390.
- in colloidal solutions (LEVI), A., ii, 646.
- in isohydric solutions (BANCROFT), A., ii, 529.
- of hydrates in solution (BANCROFT), A., ii, 195.
- of dissolved substances (VANDENBERGHE), A., ii, 335.
- of alkyl haloids, nitrates, and sulphates (NEF), A., i, 4, 349.
- of ammonium and potassium mercuriodides by water (FRANÇOIS), A., ii, 142.
- of aromatic nitro-derivatives in formic acid (BRUNI and BERTI), A., ii, 591.
- electrolytic. See Electrochemistry.
- molecular, of ammonia and of amines in aqueous solution (HANTZSCH and SEBALDT), A., ii, 69.
- Dissociation constants** of alkyl-substituted succinic acids (BONE and SPRANKLING), T., 667, 1298; P., 1900, 72, 184.
- of normal saturated dibasic acids (WALKER), T., 397.
- of azoimide (WEST), T., 705; P., 1900, 74.
- of campholytic and *isolaunonic* acids (WALKER), T., 399.
- of camphoric acid and its derivatives (WALKER), T., 396; P., 1900, 61.
- of carbon dioxide (WALKER and CORMACK), T., 8; P., 1899, 208.
- of dehydracetic acid (WALKER), T., 971; P., 1900, 147.
- of hydrochloric and the chloroacetic acids dissolved in mixtures of organic solvents and water (MORELLO), A., ii, 395.
- of hydrocyanic acid (WALKER and CORMACK), T., 15; P., 1899, 208.
- Dissolver**, a (HOPKINS), A., ii, 71.
- Distillation apparatus** (STREATFEILD and SOUTHERDEN), A., ii, 718.
- of water, apparatus for the (MAREK), A., ii, 202.
- Disulphones** (POSNER and FAHRENHORST), A., i, 16.
- reactivity of the hydrogen atoms in (KÖTZ), A., i, 369.
- of ketonic acids (POSNER), A., i, 5.
- $\text{CH}_2(\text{SO}_2\text{R})_2$, action of formaldehyde on (KÖTZ), A., i, 370.

- Di-*p*-toluenesulphono-methylpiperazide** and **-propylenediamine** (ESCH and MARCKWALD), A., i, 336.
- Di-*o*-, *m*-, and *p*-tolylethylenediamines**, their nitro-derivatives, nitrates, and mercurichlorides (MILLS), T., 1020 ; P., 1900, 127.
- Ditolyl ethylene diketone**. See Succitoyl ketone.
- Di-*o*- and *p*-tolylguanidines**, amino-, reactions of (BUSCH and BAUER), A., i, 415.
- Di-*m*-tolylmethane, 2:2':4'- and 4:2':4'-triamino-** (COHN and FISCHER), A., i, 690.
- Di-*m*- and *p*-tolylmethylenedihydroxylamine** (BAMBERGER), A., i, 342.
- Ditolylsuccinide** (LIMPRICHT), A., i, 600.
- Di-*o*- and *p*-tolylisothiocarbamides**, acyl derivatives (HUGERSHOFF), A., i, 156.
- Ditrimethylenetetrasulphone**
 $\text{CH}_2(\text{CH} \begin{smallmatrix} \text{SO}_2 \cdot \text{CH}_2 \\ \text{SO}_2 \cdot \text{CH}_2 \end{smallmatrix} \text{CH}_2)_2$ (KÜTZ), A., i, 370.
- Diuresis** and its relation to the changes in the composition of blood after trans- fusion of sodium chloride (MAGNUS), A., ii, 665.
- Dixenylamine, diamino-** (diaminotetra- phenylamine) (MERZ and STRASSER), A., i, 313.
- m*-Dixylylcarbamides, dinitro-** [NH:NO₂=4:5 and 4:6] (VITTENET), A., i, 153.
- m*-Dixylylene, C₁₆H₁₆** (PELLEGRIN), A., i, 151.
- Di-*p*-xylyl-*o*-methylenedihydroxylamine** (BAMBERGER), A., i, 342.
- Dogs**. See Agricultural Chemistry.
- Dolerite** from New Jersey (PHILLIPS), A., ii, 27.
- Dolomite**, phosphorescent, from Elba (D'ACHIARDI), A., ii, 661.
- Dopplerite** from Oldenburg (CLAESSEN), A., ii, 20.
- Dressings, surgical**, estimation of cor- rosive sublimate in (LEHMANN), A., ii, 443, 511; (URTZ), A., ii, 722.
- estimation of iodoform in, volumetric- ally (LEHMANN), A., ii, 372, 767.
- Drugs, new**; aromatic hydroxy acids and esters (EINHORN), A., i, 439.
- glucinyll derivatives of the esters of aromatic amino- and hydroxy- amino-acids (EINHORN and OPPENHEIMER), A., i, 493.
- chemical behaviour of, in the organism (FRÄNKEL), A., ii, 423.
- containing alkaloids, alkalimetric method for the valuation of (GORDIN), A., ii, 777.
- Dulcitol** in the bark of *Euonymus arto- purpureus* (HOEHNEL), A., ii, 427.
- Duryluric acid**. See 2:4:5-Trimethyl- hippuric acid.
- Dypnone**, distillation of (AMEYE), A., i, 35.
- action of potassium hydroxide on (GESCHÉ), A., i, 604.
- action of zinc ethyl and of heat on (DELAURE), A., i, 603.
- Dypnopinalcolene** (DELAURE), A., i, 603.

E.

- Earth**, edible, from Fiji (CORNEY, DAVID, and GUTHRIE), A., ii, 569.
- Earths, rare**, new spectra of the (DE- MARÇAY), A., ii, 656.
- luminescence spectra of the (MUTH- MANN and BAUR), A., ii, 544.
- molecular susceptibility of salts of the (MEYER), A., ii, 7, 186; (DU BOIS and LIEBKNECHT), A., ii, 127, 333.
- new method of fractionating some (DEMARÇAY), A., ii, 347.
- separation of the (MUTHMANN and BÖHM), A., ii, 209; (URBAIN; CHAVASTELON), A., ii, 346.
- See also Cerite metals.
- Ecgonines, *d*- and *l*-**, oxidation of (WILLSTÄTTER and BODE), A., i, 245.
- Echinopsine** and its salts (GRESHOFF), A., i, 556.
- Edestin**, metabolism with (LEIPZIGER), A., ii, 223.
- basic decomposition products of (LE- VENE), A., i, 318.
- Effusion**, phenomena of, of permanent gases (EMDEN), A., ii, 10.
- relative rates of, of argon, helium, and other gases (DONNAN), A., ii, 390.
- Effusions**, milky serous (SHAW), A., ii, 229.
- Egg-albumin**. See Albumin.
- Eggs**, echinoid, chemical fertilisation of (LOEB), A., ii, 555, 608; (VIGNIER), A., ii, 608.
- hens', composition of (JUCKENACK), A., ii, 290.
- diastatic ferment in (MÜLLER and MASUYAMA), A., ii, 420.
- chemical changes in the developing (LEVENE), A., ii, 290.
- Egg-white**, proteids of (OSBORNE and CAMPBELL), A., i, 574.
- Egg-yolk**, proteids of (OSBORNE and CAMPBELL), A., i, 616.
- detection of, in margarine (MECKE), A., ii, 123.
- Ehlite**. See Phosphorocalcite.

Ehrlich's diazo-reaction (BRIEGER), A., i, 316; (CLEMENS), A., ii, 227; (WESENBERG), A., ii, 776.

for the recognition of some morphine derivatives (CARCANO), A., ii, 776.

Elaidic acid, formation of, and action of dilute nitric acid on (EDMED), P., 1899, 190.

Elastin, proportion of basic nitrogen in (EUSTIS), A., i, 317.

ELECTROCHEMISTRY :—

Electrochemistry, quantitative lecture experiments on (MILLER and KENRICK), A., ii, 703.

Accumulators, lead, theory of (DOLEZALEK), A., ii, 2; (MUGDAN), A., ii, 463.

gaseous polarisation in (NERNST and DOLEZALEK), A., ii, 641; (STRASSER and GAHL), A., ii, 642.

Cell, aluminium (NORDEN), A., ii, 404; (MORGAN and DUFF), A., ii, 588.

new electrolytic, for rectifying alternating currents (HILDBURGH), A., ii, 520.

chromium, for the rectification of alternating currents (MORGAN and DUFF), A., ii, 588.

Clark, thermodynamics of (COHEN), A., ii, 520, 703.

inversion of hexa- and heptahydrates of zinc sulphate in the (BARNES), A., ii, 254.

concentration, with unalterable electrodes (SCHAUM), A., ii, 2.

gas, theory of (BOSE), A., ii, 704.

grey tin | solution of a tin salt | white tin (COHEN), A., ii, 183.

transition, of the third kind, theory of (COHEN), A., ii, 184.

voltaic, reversibility of (MOORE), A., ii, 381.

Weston (COHEN), A., ii, 702, 703; (JAEGER and LINDECK), A., ii, 703.

as a transition cell, and its ratio to a Clark cell (BARNES), A., ii, 520.

Conductivity, conditions under which substances possess (ABEGG), A., ii, 5.

determination of, with direct current instruments (MORGAN and HILDBURGH), A., ii, 521.

in gases traversed by cathode rays (MCLENNAN), A., ii, 587.

and internal friction in saline solutions (MASSOULIER), A., ii, 331.

ELECTROCHEMISTRY :—

Conductivity, specific gravity and surface tension of aqueous solutions containing potassium chloride and sulphate (BARNES), A., ii, 332.

of acids, apparatus for measuring the (WALKER and CORMACK), T., 5; P., 1899, 208.

of saturated fatty acids (BILLITZER), A., i, 7.

of alkali chlorides and nitrates (KOHLEAUSCH and MALTEY), A., ii, 61.

of dilute amalgams, influence of temperature on (LARSEN), A., ii, 255.

of liquid ammonia solutions (FRANKLIN and KRAUS), A., ii, 382.

of a solution of ammonia, change of the, on the addition of salts (KONOWALOFF), A., ii, 266.

of azoimide (WEST), T., 707; P., 1900, 74.

of benzoic acid, influence of substituents on the (TINGLE), A., ii, 6.

of caesium (ECKARDT and GRAEFFE), A., ii, 479.

of aqueous solutions of hydrochloric and sulphuric acids (BARNES), A., ii, 522.

of the sodium salts of hydroxymethane-, hydroxyethane-, and hydroxypentane-sulphonic acids (COJAZZI), A., i, 327.

of some sodium derivatives of nitro-paraffins (ŠULC), A., ii, 332.

of platinum tetrachloride solutions (MIOLATTI), A., ii, 214.

of compressed powders (STREINTZ), A., ii, 641.

of saturated solutions (DAWSON and WILLIAMS), A., ii, 383.

of non-aqueous solutions of inorganic salts (LINCOLN), A., ii, 6.

of double thiocyanates and cyanides (WALDEN), A., i, 430.

of animal juices and tissues (OKER-BLOM), A., ii, 290, 356, 607.

Current density, relation between polarisation and, in solid and fused salts (GOCKEL), A., ii, 704.

Current, metallic crystallisation by the (TOMMASINA), A., ii, 185; (TOMMASI), A., ii, 339.

constant, action of, on the respiration of "surviving" muscle (GUILLOZ), A., ii, 221.

Contact breaker, new (MORGAN), A., ii, 255.

ELECTROCHEMISTRY:—

- Dielectric constant**, method of determining (COOLIDGE), A., ii, 3.
 of hydrogen peroxide (CALVERT), A., ii, 331.
- Electrocapillary phenomena**, nature of (SMITH), A., ii, 330.
- Electromagnetic theory**, validity of Maxwell's equations relating to (WEDELL-WEDELSSBORG; SCHEYE), A., ii, 254.
 refutation of Poynting's theorem relating to (WEDELL-WEDELSSBORG), A., ii, 519.
 an application of Poynting's theorem (MIE), A., ii, 703.
- Electrification** of electrolytic gases (KÖSTERS), A., ii, 4.
- Electric charge** of the deviable rays of radium (P. and S. CURIE), A., ii, 254.
- Electric discharge**, silent, chemical effects of the, compared with the chemical action of light (BERTHELOT), A., ii, 329.
 in nitrogen, fluorescence and after-glow accompanying an (LEWIS), A., ii, 702.
- Electrical effects** due to the evaporation of sodium in air and other gases (HENDERSON), A., ii, 588.
- Electrical resistance**, method of determining (COHEN), A., ii, 188.
 change of, of lead dioxide (SUNDORPH), A., ii, 5.
 of tellurium (LENHER and MORGAN), A., ii, 273.
- Electric oscillations**, transparency of liquids to (DE HEEN), A., ii, 524.
- Electrical properties** of metals, influence of light on the (BUISSON), A., ii, 519.
- Thermo-electrical properties** of alloys (STEINMANN), A., ii, 523, 524.
- Electrical waves** (COOLIDGE), A., ii, 3.
- Electrochemical equivalent** of carbon (PEASE), A., ii, 257; (SKINNER), A., ii, 523.
 of copper and silver (RICHARDS, COLLINS, and HEIMROD), A., ii, 256.
- Electrochemical properties** of silver fluoride and of fluorine (AREGG and IMMERWAHR), A., ii, 256.
- Electrode**, metallic deposition by electrical transport from one, to the other (TOMMASINA), A., ii, 185.
- Electrodes**, new, for electrolytic estimations (HOLLARD), A., ii, 435.
 reversible, of the second order, potential of, with mixed depolarisers (THIEL), A., ii, 521.

VOL. LXXVIII. ii.

ELECTROCHEMISTRY:—

- Electrolysis**, experiments on (CASPARI), A., ii, 7.
 accessory reactions in (BROCHET), A., ii, 706.
- Oettel's gasometric method for (BROCHET), A., ii, 706.
 through semipermeable membranes (MORITZ), A., ii, 522.
- of fused salts (LORENZ and HEFFENSTEIN), A., ii, 333; (HEFFENSTEIN), A., ii, 383; (QUINCKE; LORENZ), A., ii, 644.
- of alkali chloride solutions (FOERSTER), A., ii, 72, 400; (MÜLLER), A., ii, 73; (BROCHET), A., ii, 205, 276, 541; (WOHLWILL), A., ii, 400, 471; (SIEVERTS), A., ii, 470; (LORENZ and WEHRLIN), A., ii, 476.
- of alkali chloride solutions with a diaphragm (FOERSTER and JORRE), A., ii, 343.
- of alkali chloride solutions, evolution of oxygen at the anode in the (FOERSTER and SONNEBORN), A., ii, 645.
- of the bromides of the alkaline earth metals (SARGHEL), A., ii, 400.
- of concentrated hypochlorite solutions (BROCHET), A., ii, 594, 706.
- of lithium chloride (KAHLENBERG), A., ii, 206.
- of potassium chlorate (VOEGE), A., ii, 185.
- of potassium chloride (BROCHET), A., ii, 205, 276, 541.
- of sodium chloride (WOLF), A., ii, 382; (LORENZ and WEHRLIN), A., ii, 476.
- of the nitrogen hydrides and of hydroxylamine (SZARVASY), T., 603; P., 1900, 3.
- of azoimide (PERATONER and ODDO), A., ii, 651.
- of metallic phosphate solutions (FERNBERGER and SMITH), A., ii, 109.
- of sulphuric acid, nature of the process which occurs at the aluminium anode in the (NORDEN), A., ii, 404; (MORGAN and DUFF), A., ii, 589.
- of zinc and manganese (RIEDERER), A., ii, 49.
- of the alkali salts of organic acids (PETERSEN), A., ii, 522.
- of silver acetate (MULDER), A., ii, 724.
- of fused mixtures of aniline and its hydrochloride (SZARVASY), T., 208; P., 1899, 194.

65

ELECTROCHEMISTRY :—

- Electrolysis** of aniline and nitrobenzene (MÖLLER), A., i, 27.
 of azo- and of nitrobenzene (LÖB), A., i, 697; ii, 706.
 of ethyl potassium diethoxysuccinate (BROWN and BOLAM), A., i, 201.
 of solutions of sucrose (ULSCH), A., i, 15.
Electrolytes, coagulative power of (WHETHAM), A., ii, 62.
 relation between heat of solution and solubility of (VAN LAAR), A., ii, 708.
 depression of the freezing point by mixtures of (BARNES), A., ii, 526.
 highly dissociated, degree of dissociation and dissociation equilibrium of (JAHN), A., ii, 522, 707.
 finding the composition of mixed, when the degree of dissociation is given (MACGREGOR), A., ii, 332.
Non-electrolytes, freezing point of aqueous solutions of (LOOMIS), A., ii, 335.
Electrolytic dissociation of acids and bases and heat of neutralisation (THIEL), A., ii, 260.
 of very weak inorganic acids (WALKER and CORMACK), T., 5; P., 1899, 208.
 of aqueous solutions of two electrolytes with one common ion (MACGREGOR), A., ii, 62.
 of certain salts in methyl and ethyl alcohols by the boiling point method (JONES), A., ii, 187.
 of solutions of potassium and sodium sulphates tested by freezing point determinations (ARCHIBALD), A., ii, 65.
Electrolytic decomposition point of aqueous solutions (GÖCKEL), A., ii, 332.
Electrolytic deposition of metals from non-aqueous solutions (KAHLENBERG), A., ii, 521.
 of brass (MORGAN), A., ii, 345.
 of chromium (COWPER-COLES), A., ii, 408.
Electrolytic formation of chlorates and hypochlorites (FOERSTER), A., ii, 72, 400; (MÜLLER), A., ii, 73; (BROCHET), A., ii, 205, 276, 541, 706; (FOERSTER and JORRE), A., ii, 343; (WOLF), A., ii, 382; (WOHLWILL), A., ii, 400, 471; (SIEVERTS), A., ii, 470; (LORENZ and WEHRLIN), A., ii, 476; (FOERSTER and SONNEBORN), A., ii, 645.

ELECTROCHEMISTRY :—

- Electrolytic preparation** of benzidine (LÖB), A., i, 697; ii, 706.
 of induline dyes (SZARVASY), T., 207; P., 1899, 194.
 of colouring matters resembling indulines (LÖB), A., i, 464.
Electrolytic modification of Sandmeyer's and Gattermann's reactions (VOTOČEK and ZENŠEK), A., i, 19.
Electrolytic oxidation of ketoximes (SCHMIDT), A., i, 332.
 of succinic acid (CLARKE and SMIT), A., i, 77.
Electrolytic reduction (LÖB), A., ii, 706.
 of difficultly reducible substances in sulphuric acid solution (TAFEL), A., ii, 588.
 of nitrobenzene (HABER), A., i, 281; ii, 257; (HABER and SCHMIDT), A., ii, 282.
 of *p*-nitroacetanilide (SONNEBORN), A., i, 464.
 of *m*-nitrotoluene (ROHDE), A., i, 20.
 of succinimides (TAFEL and STERN), A., i, 557.
Electrolytic synthesis of iodoform (DONY-HÉNAULT), A., i, 577.
 of ketones and diketones (HOFER), A., i, 275.
 of organic substances (DONY-HÉNAULT), A., ii, 644.
Electrolytic solution pressure, theory of (LEHFELDT), A., ii, 62; (KRÜGER; NERNST), A., ii, 706.
Electromotive behaviour of substances with several stages of oxidation (LUTHER), A., ii, 705.
 of chromium (HITTORF), A., ii, 127; (MORGAN and DUFF), A., ii, 589.
Electromotive efficiency of the elementary gases (BOSE), A., ii, 704.
Electromotive force and chemical equilibrium (ROTHMUND), A., ii, 183; (DANNEEL), A., ii, 464.
 and diffusion velocity, influence of the addition of a salt with one similar ion on (ABEGG and BOSE), A., ii, 127.
 of cells containing red and yellow mercuric oxides (COHEN), A., ii, 184.
 of the Clark cell, change of (BARNES), A., ii, 254.
 of fused halogen compounds of heavy metals (LORENZ), A., ii, 61.
Ions, velocity of, produced in gases by Röntgen rays (ZELENY), A., ii, 587.
 migration and separation of, apparatus for illustrating the (MÜLLER), A., ii, 643.

ELECTROCHEMISTRY;—

- Migration constant** of sulphuric acid (KENDRICK), A., ii, 643.
- Ionic charges**, effect of the interaction of, on osmotic pressure (V. TÜRIN), A., ii, 712.
- Ionic mobility**, model to show (KOHLE-RAUSCH), A., ii, 712.
- Ionisation** of complex solutions of given concentration, finding the, and the converse problem (MAC-GREGOR), A., ii, 332.
- Ion concentrations** in solutions of potassium, sodium, and hydrogen chlorides (JAHN), A., ii, 522, 707. in fused salts (LORENZ), A., ii, 61.
- Polarisation**, relation between current density and, in solid and fused salts (GÖCKEL), A., ii, 704. in quantitative electrolytic determinations (MARSHALL), A., ii, 185. gaseous, in the lead accumulator (NERNST and DOLEZALEK), A., ii, 641; (STRASSER and GAHL), A., ii, 642.
- Potential** of reversible electrodes of the second order with mixed depolarisers (THIEL), A., ii, 521. discharge, of chlorine ions (MÜLLER), A., ii, 643.
- Potentials**, oxidation (CROTOGINO), A., ii, 642. of copper electrodes in solutions (IMMERVAHR), A., ii, 642.
- Potential difference** with manganese dioxide electrodes (TOWER), A., ii, 331. between solutions in relation to electrocapillary phenomena (SMITH), A., ii, 330. between a platinum and an iodine electrode (KÜSTER and CROTOGINO), A., ii, 255. between a solid salt and its solution (CAMPETTI), A., ii, 704. of silver in solutions of its mixed halogen salts (KÜSTER and THIEL), A., ii, 255.
- Element**, new, in crude samarium oxide (DEMARÇAY), A., ii, 481.
- Elements**, etymological researches on the names of the (DIERGART), A., ii, 59. relation of physical properties of, to atomic weights (SANDER), A., ii, 137; (BAYLEY), A., ii, 188. hardness of the (RYDBERG), A., ii, 392. estimation of, in organic compounds (BERTHELOT), A., ii, 172.
- Ellagic acid** from various tannin matters (PERKIN), T., 423.
- Elm galls**, gum in (PASSERINI), A., ii, 427.
- Embelic acid** and its dibenzoyl derivative (HEFFTER and FEUERSTEIN), A., i, 498.
- Emodin** and its constitution (HESSE), A., i, 40; (LIEBERMANN), A., i, 355. aloe- and frangula-, distinction between (OESTERLE), A., i, 304.
- Emulsin** in tobacco leaves (BEHRENS), A., ii, 239.
- Enantiotropy** of tin (COHEN and VAN ELJK), A., ii, 83, 212; (COHEN), A., ii, 212, 408.
- Endeolite** from Greenland (FLINK), A., ii, 412.
- Endlichte** from Hillsboro', New Mexico (GOLDSCHMIDT), A., ii, 600.
- Energy**, free, development and application of a general equation for (LEWIS), A., ii, 264. change of, in fused halogen compounds of heavy metals (LORENZ), A., ii, 61.
- Enzymes** (SACHAROFF), A., i, 268. action of, in resolving racemic compounds (FISCHER), A., i, 140; (MARCKWALD and MCKENZIE), A., i, 207. effect of, on the germination of old seed (THOMSON), A., ii, 496. ammonia-forming, in the liver (JACOBY), A., ii, 672. amylolytic and proteolytic, in human faeces (HEMMETER), A., ii, 607. bacteriological, behaviour of, in disease (EMMERICH and LÖW), A., ii, 159. cellulose (NEWCOMBE), A., ii, 99. diastatic, in hens' eggs (MÜLLER and MASUYAMA), A., ii, 420. distribution of, in the potato plant and in oats (MAYER), A., ii, 427. indigo (BEYERINCK), A., i, 230, 403; (HAZEWINKEL), A., i, 403. inorganic (BREDIG and MÜLLER v. BERNECK), A., ii, 213. lipolytic, in human ascitic fluid (HAMBURGER), A., ii, 420. oxidising, decomposition of chlorophyll by (WOODS), A., ii, 234. in the vine (CORNÜ), A., ii, 102. oxidising and reducing, in the animal organism (ABELOUS and GÉRARD), A., i, 268. hydrogenating and reducing, in the organism (ABELOUS and GÉRARD), A., ii, 226. proteolytic, produced by *Aspergillus niger* (MALFITANO), A., ii, 493.

Enzymes, proteolytic, of malt (FERNBACH and HUBERT), A., i, 576, 616; (WINDISCH and SCHELLHORN), A., i, 712.

occurrence and action of, in germinated seeds (BUTKEWITSCH), A., ii, 744.

of germinating seeds (HARLAY), A., ii, 744.

produced during the germination of seeds (BOURQUELOT and HÉRISSEY), A., ii, 35, 233.

of the carob bean (BOURQUELOT and HÉRISSEY), A., i, 320; ii, 35, 233.

of "koji" (KOZAI), A., ii, 743.

formation of, characteristic, of yeasts (KLÖCKER), A., ii, 743.

Enzymes. See also :—

Aldehydase.

Amylase.

Chymosin.

Diastase.

Emulsin.

Galactase.

Gaultherase.

Invertase.

Isatase.

Lactase.

Pancreatin.

Papain.

Parachymosin.

Pepsin.

Rhamminase.

Schinoxydase.

Seminase.

Trypsin.

Tyrosinase.

Zymase.

Epichlorhydrin, action of potassium hydroxide on, in presence of alcohols (ZUNINO), A., i, 535.

Epidote (TERMIER), A., ii, 735.

Epinephrine, its salts, and triacetyl and benzoyl derivatives (ABEL), A., i, 72.
phenylcarbamic ester of (ABEL), A., i, 368.

Epistolite from Greenland (BOEGGILD), A., ii, 414.

Equation of condition (REINGANUM), A., ii, 135.

for liquids; determination of the constants *a* and *b* of van der Waal's equation (GUYE and FRIDERICH), A., ii, 709.

EQUILIBRIUM :—

Phase rule, Gibbs' (WIND), A., ii, 197.
application of, to alloys and rocks (LE CHATELIER), A., ii, 197.

Equilibrium, development and application of a general equation for physico-chemical (LEWIS), A., ii, 264.

EQUILIBRIUM :—

Equilibrium in isomorphous mixtures (BRUNI and GORNI), A., ii, 197.

in the system, acetone, water, phenol (SCHREINEMAKERS), A., ii, 393.

between alcohol, gelatin, and water; and agar and water (HARDY), A., ii, 396.

in systems containing an alkali salt, water, and alcohol (DE BRUYN), A., ii, 266.

in the system, aniline, water, phenol (SCHREINEMAKERS), A., ii, 135.

between hydrochloric acid, phenol, and water (KRUG and CAMERON), A., ii, 393.

between hydrogen peroxide and persulphuric acid (LOWRY and WEST), T., 955; P., 1900, 127.

between lead and zinc, and mixtures of their fused chlorides (REINDERS), A., ii, 715.

in the systems, phenol, water, *d*-tartaric or racemic acid (SCHREINEMAKERS), A., ii, 393.

of the system, potassium sodium sulphate, sodium chloride, sodium sulphate (MEYERHOFFER and SAUNDERS), A., ii, 198.

between sulphuric acid and sulphates in aqueous solution (KAY), A., ii, 198.

Equilibrium phenomena in presence of a double salt (MEYERHOFFER and SAUNDERS), A., ii, 198.

Equilibrium relations of carnallite (VAN'T HOFF and MEYERHOFFER), A., ii, 12.

chemical. See Affinity.

false (BODENSTEIN), A., ii, 136.

Erbium, specific gravity of (MEYER), A., ii, 143.

didymium and yttrium, microchemical researches on (POZZI-ESCOT and COUQUET), A., ii, 404.

Erbium salts, effect of dilution, temperature, etc., on the absorption spectra of solutions of (LIVEING), A., ii, 517.

Erythritol in *Trentepohlia Jolithus* (BAMBERGER and LANDSIEDL), A., i, 579.

oxidation of, by the sorbose bacterium (BERTRAM), A., i, 377.

d-**Erythritol**, preparation of (BERTRAND), A., i, 424.

l-**Erythritol**, partial synthesis of (MAQUENNE), A., i, 423, 472.

l-**Erythronic acid** (*trihydroxybutyric acid*) (RUFF and MEUSSER), A., i, 139.

- d*-Erythrose (RUFF and MEUSSER), A., i, 139.
- l*-Erythrose (MAQUENNE), A., i, 424, 472.
osazone and diacetamide (WOHL), A., i, 140.
- l*-Erythroseacetamide (MAQUENNE), A., i, 424, 472.
- Erythrulose, a new sugar (BERTRAND), A., i, 377.
reduction of (BERTRAND), A., i, 424.
- Essence of lemon and of bitter orange, analysis of (WENDER and GREGOR), A., ii, 767.
- Esterification of the alcohol, $C_5H_{10}O$, from isoprene bromide (MOKIEWSKY and MENSCHUTKIN), A., i, 509.
- of camphoric acid (WEGSCHEIDER), A., i, 10.
- of cinchomeric and quinolinic acids (KIRPAL), A., i, 51.
- of phosphoric acid by glycerol, velocity and limits of (IMBERT and BELUGOU), A., i, 130.
- of the phthalic acid group (GRAEBE), A., i, 547.
- of bromo- and hydroxy-terephthalic acids (WEGSCHEIDER and BITTNER), A., i, 658.
- of nitroterephthalic acid (WEGSCHEIDER), A., i, 657.
- Esters, rate of formation of, from benzoic chloride and fatty alcohols (BRUNER and TOLLOCZKO), A., ii, 648.
- decomposition of (ŠULC), A., ii, 395.
- double compounds of, with orthophosphoric acid (RAIKOW), A., i, 602.
- of ketonic acids, influence of the solvent on the constitution of (WISLICENY), A., i, 9.
- β -ketonic, condensation of, with amines (TINGLE), A., i, 544.
- Ethane, preparation of (SABATIER and SENDERENS), A., i, 469, 470, 471, 534.
- bromine derivatives (POURET), A., i, 369.
- compounds of, with aluminium bromide and carbon disulphide (KONOWALOFF and PLOTNIKOFF), A., i, 323.
- Ethane, *as-dichloro-* (*ethylidene chloride*), action of, on phenols (FOSSE and ETTINGER), A., i, 392.
- Ethanedicarboxylic acids. See:—
Methylmalonic acid.
Succinic acid.
- Ethanolmercury salts (HOFMANN and SAND), A., i, 385, 618; (BILMANN), A., i, 432.
- Ethenemercury salts (HOFMANN and SAND), A., i, 384.
- Ethenyltriaminonaphthalene and its isomeride and their salts, and acyl-, methyl-, and phenylazo-derivatives (MELDOLA and EYNON), T., 1159; P., 1900, 166.
- Ether. See Ethyl ether.
- Ether, $C_{15}H_{30}O_3$, from ethyl alcohol, isoamyl nitrite and hydrogen chloride (KISSEL), A., i, 620.
- Etherification, inhibiting effect of, on substitution in phenols (ARMSTRONG and LEWIS), P., 1900, 157.
- of β -naphthol derivatives (DAVIS), T., 33; P., 1899, 210.
- Ethers, formation of, by means of dry silver oxide and alkyl haloids (LANDER), T., 729; P., 1900, 6, 90.
- decomposition of, by heat (TISTSCHENKO), A., i, 271.
- Ethers. See also:—
Acetal-cresol.
Acetal-resorcinol.
p-Acetoxy- ψ -cumyl *di*bromo-*p*- ψ -cumyl ether.
p-Acetoxymesityl ethers.
Anethole.
Anisole.
Benzeneazo-*o*-*di*bromophenol ethyl ether.
p-Benzoxymesityl ethyl ether.
Benzylidenebisresacetophenone ethyl ether.
p-isoButyroxyl- ψ -cumyl ethyl ether.
p-isoButyroxymesityl ethyl ether.
Carvacrylacetol.
Cedron methyl ether.
Cinnamylguaiaacol.
Citronellaldimethylacetol.
 ψ -Cumenoxypropionacetol.
isoDialdane.
Dibenzylformal.
3:5-Dihydroxyanisole.
Dihydroxydimesityl ether.
1:4-Dimethoxynaphthalene.
Dimethoxyphenanthrenes.
3:4-Dimethoxystilbene.
Dinaphthoxyethane.
Diphenoxyethane.
Diphenylmethyl oxide.
Diphenylphenol methyl ether.
Ethoxyhydrindene.
Ethyl allyl ethers.
Ethyl ether.
o-Ethylphenoxyacetol.
Eugenyl propyl ethers.
Fisetol ethyl ether.
Gallein ethyl ethers.
Gallin ethers.
Glyceryl *di*isopropyl, *di*tert.-butyl, *di*capryl, *di*octyl, and *di*benzyl ethers.

Ethers. See:—

- Guaiacol.
p-Hydroxybenzyl alcohol, ethers of.
 Hydroxy- ψ -cumyl ethers.
 Hydroxy- ψ -cumylene ethers.
 1:4-Hydroxyethoxynaphthalene.
 4-Hydroxymesityl ethers.
 1:4-Hydroxymethoxynaphthalene.
 3:4-Hydroxymethoxyphenanthrene.
 β -Hydroxypropaldehydediethylacetal.
 Hydroxyxylylene glycols, ethers of.
 Indonesorcinol ether.
 Ketoapocinchénine ethyl ether.
 Ketoapohomocinchénine ethyl ether.
 Luteolin ethers.
o-Methoxybenzyl alcohol, methyl and ethyl ethers of.
 Methoxybenzylidenecamphor.
 5-Methoxyhydrindene.
 Methoxymesityl oxide.
 Methoxyphenanthrenes.
o-Methoxyphenoxystyrene.
p-Methoxystilbene.
o-Methoxystyrene.
 Methylacetylquinol.
 Methylacetylresorcinol.
 Methylal.
 β -Naphthyl methyl, ethyl, and propyl ethers.
 Orcinol methyl ether.
 Phenol ethers.
 α -Phenoxypropionacetal.
 Phenoxystyrene.
 Phentetol ethyl ether.
 Phenyl benzyl ethers.
 Phloroglucinol ethers.
p-isoPropylphenoxyacetal.
 Quinolinephenetole.
 Resorcinol methyl ethers.
 Saffrole.
 Thymoxyacetal.
 Tolyloxypropionacetal.
 Tolyloxystyrenes.
 1:5:6-Trimethoxyphenanthrene.
 Trimethyldihydroresorcinol ethyl ether.
 Triphenylcarbinol ethers.
 Vanillin methyl ether.
 Xylenol ethers.
 Xylenoxyacetal.
- β -Ethothio-*isocrotonic*, - α -methyl-, and - α -ethyl-*isocrotonic acids* (POSNER), A., i, 5.**
 β -Ethothioglutaconic acid and its salts (POSNER), A., i, 6.
 α -Ethoxy- γ -amyloxy-*isovaleric acid* (KISSEL), A., i, 620.
***p*-Ethoxybenzonitrile** (HENRY), A., i, 172.
 β -Ethoxy- β -benzylacrylic acid, α -cyano-, methyl ester (HALLER and BLANC), A., i, 496.
- Ethoxycaronic acid and anhydride** (PERKIN, THORPE, and WALKER), P., 1900, 149.
3-Ethoxy-1:5-diphenyltriazole (WHEELER and JOHNSON), A., i, 634.
6-Ethoxyflavanoneoxime (V. KOSTANECKI), A., i, 449.
4'-Ethoxyflavone (GROSSMANN and V. KOSTANECKI), A., i, 669.
Ethoxyformamidine. See Ethylisuretine.
***p*-Ethoxyformanilide** (BÉHAL), A., i, 581.
5-Ethoxyhydrindene (MOSCHNER), A., i, 344.
7-Ethoxy-2-methylchromone (BLOCH and V. KOSTANECKI), A., i, 308.
2-Ethoxy-3:4'-methylenedioxy-flavanone and -flavone (V. KOSTANECKI and SCHMIDT), A., i, 238.
4-Ethoxy-2-methyltrimesic acid and its esters (ERRERA), A., i, 33.
 β -Ethoxy- β -phenylacrylic acid, α -cyano-, ethyl ester (HALLER and BLANC), A., i, 496.
3-Ethoxy-1-phenyl-3-methyltriazole (WHEELER and JOHNSON), A., i, 634.
Ethoxyphenylthiodiazolone (WHEELER and BARNES), A., i, 564.
3-Ethoxy-1-phenyl-5-triazolone (WHEELER and SANDERS), A., i, 564.
***p*-Ethoxyphenylurethane, sulphonie acid of** (COHN), A., i, 29.
2-Ethoxypyridine, 3:5:6:4-trichloro-amino- (SELL and DOOTSON), T., 4.
Ethylacetoacetic acid, ethyl ester, action of dry silver oxide and ethyl iodide on (LANDER), T., 741; P., 1900, 6.
Ethyl alcohol, formation of, in the putrefaction of proteids free from carbohydrates (VITALI), A., ii, 297.
 boiling point of, with mixtures of methyl alcohol (HAYWOOD), A., ii, 64.
 action of, on proteids (ROSEMAN), A., ii, 92, 356.
 action of sodium platinichloride on (JØRGENSEN), A., i, 542.
 influence of, on milk formation (ROSEMAN), A., ii, 225.
 effect of ingested, during pregnancy (NICLOUX), A., ii, 416.
 influence of, on muscular work (SCHEFFER), A., ii, 418.
 nutritive value of (ATWATER), A., ii, 288.
 denatured, detection of benzene in (HALPHEN), A., ii, 446.
 estimation of, in the blood and tissues in acute alcoholism (GRÉHANT), A., ii, 95, 112.
 estimation of, in lemonade essences (WENDER and GREGOR), A., ii, 767.

- Ethyl allyl ethers**, substituted, action of nitrosyl chloride on (IPATIEFF), A., i, 15.
cyanide. See Propionitrile.
diphenyl- and ditolyl-ethenylamidine-carbonates and their acetyl derivatives (TRAUBE and EYME), A., i, 118.
- Ethyl ether**, refractive power of, near the critical point (GALITZIN and WILIP), A., ii, 461.
boiling point of, with mixtures of benzene and methyl alcohol (HAYWOOD), A., ii, 64.
behaviour of, under the influence of light and oxygen (BERTHELOT), A., i, 3.
action of, on alkaloid salts (SCHAEER), A., ii, 455.
detection of acetaldehyde in (BLASER), A., ii, 179.
- Ethyl ether mercury bromide** (HOFMANN and SAND), A., i, 618.
mercury chloride (HOFMANN and SAND), A., i, 385.
- Ethyl iodide**, action of, on mercurous nitrite (RAY), P., 1899, 239.
mercaptan, action of, on acetylacetone, benzil, and benzoin (LAGUET), A., i, 503.
condensation of, with ketonic acids (POSNER), A., i, 5.
nitrite, action of, on trisubstituted phenols (THIELE and EICHWEDE), A., i, 501.
- Ethylamine**, compounds of, with lithium chloride (BONNEFOI), A., ii, 130.
tellurium bromide and chloride (LENHER), A., i, 379.
tin haloids (COOK), A., i, 142.
- Ethylamino-bromo- and -chloro-indone** (LANSER and WIEDERMANN), A., i, 667.
- γ -**Ethyl- β -amylene**. See Heptylene.
- β -**Ethyl-sec.- and -tert.-amylhydroxylamines** and their salts (BEWAD), A., i, 631.
- Ethylbenzene** (*phenylethane*) and its nitro- and amino-derivatives (WEISWEILLER), A., i, 291.
refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
- β -**Ethyl-sec.-butylhydroxylamine** and its salts (BEWAD), A., i, 630.
- Ethylisocarbamide** (STIEGLITZ and MCKEE), A., i, 431.
- 3-Ethylisocarbostyryl** (GABRIEL and COLMAN), A., i, 359.
- Ethyl-dichloroamine**, preparation of (PALOMAA; TCHERNIAC), A., i, 143.
- Ethylchlorophenomorpholone** (BISCHOFF), A., i, 442.
- Ethylchloroisopropylketoxime** (IPATIEFF), A., i, 14.
- Ethylcoumarones**, 4- and 6- (STOERMER), A., i, 652.
- Ethylcyananiline** (SCHOLL and NÖRR), A., i, 435.
- Ethylcytisine** (RAUWERDA), A., i, 608, 684.
- Ethyldiacetylacetone(?)** (COLLIE and STEELE), T., 970; P., 1900, 146.
- Ethylene**, preparation of (SABATIER and SENDERENS), A., i, 471, 534.
hydrogenation of, in presence of reduced metals (SABATIER and SENDERENS), A., i, 469.
hydrogenation of, in presence of finely divided platinum (SABATIER and SENDERENS), A., i, 471.
action of finely divided platinum, cobalt, and iron on (SABATIER and SENDERENS), A., i, 534.
action of, on mercury salts (HOFMANN and SAND), A., i, 384, 618; (BILMANN), A., i, 431.
compounds of, with mercuric salts (HOFMANN and SAND), A., i, 618.
estimation of, in coal gas (HABER), A., ii, 629.
- Ethylene, dibromo-**, action of alcoholic potash on (NEF), A., i, 23.
perbromo-, action of metals on, and oxidation of (NEF), A., i, 23.
diiododinitro- and *triiodonitro-* (*triiodovinyl nitrate*) (BILTZ and KEDESDY), A., i, 534.
- Ethylenebis-mono- and -di-phenylsemicarbazide**; **Ethylenebisphenylcarbazinic acid**, esters of, and **Ethylenebisphenylpicrazide** (HISCHMANN), A., i, 251.
- Ethylene-blue**, acyl derivatives of (COHN), A., i, 455.
- Ethylenediamine**, condensation of, with ethyl cetipate (THOMAS-MAMERT and WEIL), A., i, 459.
- Ethylene-diamine- and -diammonium-palladio-chlorides** (KURNAKOFF and GWOSDAREFF), A., i, 209.
- Ethylenedicarboxylic acid**. See Fumaric acid.
- Ethylene glycol diformate** (BÉHAL), A., i, 581.
iodohydrin (CHARON and PAIX-SÉAILLES), A., i, 423.
- Ethyleneketotriazolecarboxylic acid**, $\alpha\beta$ -dichloro-, and *tetra*chloro- (ZINCKE, STOFFEL, and PETERMANN), A., i, 527.
- Ethylene-1:2:3-triazolecarboxylic acid**, $\alpha\beta$ -dichloro-, and the action of chlorine on (ZINCKE, STOFFEL, and PETERMANN), A., i, 527.

- Ethylenetrimethylenediamine** carbamide, diphenyldithiocarbamide and thiocarbamate (ESCH and MARCKWALD), A., i, 336.
- β -Ethylsec. heptylhydroxylamine** and its salts, and reduction on oxidation (BEWAD), A., i, 631.
- Ethylcyclohexane** (*ethylcyclohexane*) (KURSANOFF), A., i, 19, 89.
- Ethylidene chloride.** See Ethane, *as-dichloro*.
- i*-Ethylidenelactic acid.** See Lactic acid.
- Ethylidene-oxanilide** and *-p*-oxalotolidide (V. PECHMANN and ANSEL), A., i, 287.
- Ethylisurette** (*ethoxyformamidine*) (BIDDLE), A., i, 137.
- 2-Ethyl-4-ketodihydroquinazoline** (BOGERT and GOTTHELF), A., i, 412.
- Ethylmesityliodonium chloride** and platinichloride, *dichloro*- (WILLGERODT and ROGGAZT), A., i, 433.
- Ethylcyclohexane.** See Ethylcyclohexane.
- 1-Ethyl-naphthindolinonequinone-3-carboxylic acid**, ethylamine, other salts, and ethyl ester (LIEBERMANN), A., i, 310.
- Ethyl- β -naphthylamine**, action of benzaldehyde on (MORGAN), T., 1210; P., 1900, 171.
hydrochloride, action of formaldehyde on (MORGAN), T., 828; P., 1900, 131.
- Ethylloxalic anhydride** (BOUVEAULT), A., i, 474.
- o*-Ethylphenoxyacetal** (STOERMER), A., i, 652.
- Ethylphloroglucinol** and its triacetyl derivative (WEISWEILLER), A., i, 291.
- Ethylisopropylacetic acid.** See Heptoic acid.
- Ethylisopropylaniline** and its compounds with platinic chloride and the action of cyanogen bromide on (V. BRAUN), A., i, 642.
- β -Ethylpropylhydroxylamine** and its hydrochloride (BEWAD), A., i, 631.
- Ethyliso-propyl- and -butyl-thetine bromides** (STRÖMHOLM), A., i, 326.
- Ethylisopropylmalonic acid** and its ethyl ester (CROSSLEY and LE SUEUR), T., 83; P., 1899, 225.
- Ethylpyrrolidone** (TAFEL and STERN), A., i, 558.
- 1-Ethyl-2-quinolone**, luminosity of (DECKER), A., i, 688.
- 7-Ethyliserosindoneoxime** (FISCHER and HEPP), A., i, 461.
- β -Ethylsulphoneglutaconic acid** (POSNER), A., i, 6.
- Ethylthiophenyl-naphthaphenazonium chloride** (FISCHER and HEPP), A., i, 462.
- Ethyl- ψ -uric acid** and **3-Ethyluric acid** and their salts (ARMSTRONG), A., i, 636.
- Eugenyl** and **iso-Eugenyl propyl ethers** (POND, MAXWELL, and NORMAN), A., i, 102.
- Euonymus arthropurpureus*, dulcitol in the bark of (HOEHNEL), A., ii, 427.
- Euonymus japonicus*, "honey" of (MAQUENNE), A., ii, 161.
- Evaporation**, relation between pressure and (HALL), A., ii, 9.
- Exalgin**, test for, in antipyrine (RAIKOW and SCHARBANOW), A., ii, 456.
- Expansion** of fused silica (LE CHATELIER), A., ii, 539.
- Explosives**, use of ammonium perchlorate in the manufacture of (ALVISI), A., ii, 205.
relative stability of (BERTHELOT), A., i, 620.
- Explosive wave**, development and propagation of an (LE CHATELIER), A., ii, 647.

F.

- Fæces**, amylolytic and proteolytic ferments in human (HEMMETER), A., ii, 607.
xanthine bases in (PARKER), A., ii, 556.
estimation of cellulose in (MANN), A., ii, 250.
- Fahlore.** See Tetrahedrite.
- Farmyard manure.** See Agricultural Chemistry.
- Fat**, formation of, in the organism by intensive feeding of fat (HENRIQUES and HANSEN), A., ii, 668.
human, composition and heat of combustion of (BENEDICT and OSTERBERG), A., ii, 491.
determination of the melting point of (JEAN), A., ii, 179.
transformation of, into glycogen (BOUCHARD and DESGREZ), A., ii, 418.
rapidity of hydrolysis of (KREIS and WOLF), A., ii, 324; (LÜHRIG), A., ii, 667.
absorption of (HOFBAUER), A., ii, 605; (PFLÜGER), A., ii, 667; (FRIEDENTHAL), A., ii, 668.
rate of absorption and of assimilation of, during fasting (MOSSO), A., ii, 605.
absorption of, in the large intestine (HAMBURGER), A., ii, 418.
relative digestibility of certain, in the human intestine (LÜHRIG), A., ii, 224, 355, 667.

- Fat**, rancidity of (NAGEL), A., i, 271.
 apparatus for the extraction of (TAYLOR), A., ii, 115.
 in cartilage (SACERDOTTI), A., ii, 291.
 of human chyle, composition of (ERBEN), A., ii, 739.
 in glands (NIKOLAIDES), A., ii, 153.
 of normal and degenerated heart muscle (LINDEMANN), A., ii, 32.
 pathological (TAYLOR), A., ii, 606.
 from proteid (PFLÜGER), A., ii, 91, 92.
 meaning of the acetyl value in the analysis of (LEWKOWITSCH), A., ii, 323.
 bromine and iodine values of (WILLIAMS), A., ii, 633.
 the "inner saponification number" in the analysis of (FAHRION), A., ii, 251.
 Welmans' phosphomolybdate test for the detection of (WELMANS; SOLTSEIN), A., ii, 697.
 detection of phytosterol and cholesterol in (KREIS and RUDIN), A., ii, 252.
 rapid estimation of the iodine number of (BELLIER), A., ii, 632.
 Hübl's analysis method for the estimation of (WELMANS), A., ii, 514.
 estimation of, in dairy produce (LINDET), A., ii, 451.
 estimation of, in milk (TIMPE), A., ii, 179; (GALLIEN; MORINI; LÉZÉ), A., ii, 324; (RICHMOND), A., ii, 696.
 estimation of, in condensed milk (LEACH), A., ii, 771.
 estimation of, in sweetened condensed milk (GEISLER), A., ii, 771.
 estimation of, in sweetened condensed milk by the Babcock test (FARRINGTON), A., ii, 771.
 estimation of glycerol in (JEAN), A., ii, 694.
- Fats**. See also:—
 Butter.
 Lard.
 Margarine.
 Maripa fat.
 Milk.
 Wool fat.
- Fat extractor**, a multiple (PENNY), A., ii, 770.
- Fatty compounds**, configuration and classification of (KRAFFT), A., i, 577.
 saturated, configuration of (PETRENKO-KRITSCHENKO), A., i, 421.
- Fatty substances**, estimation of sugar in (POSSETTO), A., ii, 176.
- Fayalite**, altered, from the granulites of Villacidro (LOVISATO), A., ii, 736.
- Fedorowite** (VIOLE and KRAUS), A., ii, 662.
- Fehling's solution** (BULLNHEIMER and SEITZ), A., i, 330.
- Fenchane**, tribromo-, and the action of zinc dust and acetic acid on it (CZERNY), A., i, 675.
- Fenchene hydrobromide** (KONDAKOFF and LUTSCHININ), A., i, 605.
- Fenchocamphorone** and its reactions (WALLACH, NEUMANN, and v. WESTPHALEN), A., i, 241.
- Fencholenic acid**, isomeric (WALLACH), A., i, 241; (CZERNY), A., i, 675.
- Fenchone**, bromo-, and the action of alcoholic potash on (CZERNY), A., i, 675.
pernitroso-, action of semicarbazide acetate on (RIMINI), A., i, 555.
- Fenchone series**, compounds of the (WALLACH, NEUMANN, and v. WESTPHALEN), A., i, 241.
- Fenchyl and isofenchyl alcohol** and their derivatives (BERTRAM and HELLE), A., i, 398; (KONDAKOFF and LUTSCHININ), A., i, 604.
- Fenchyl chlorides and bromides** (KONDAKOFF and LUTSCHININ), A., i, 604.
- Fenugreek**. See Agricultural Chemistry.
- Fermentation** and denitrification (WOLFF), A., ii, 298.
 of cellulose (OMELIANSKY), A., ii, 493.
 of trehalose (BAU), A., ii, 98.
 of yeast (LINTNER), A., ii, 296.
 by yeast in an antiseptic medium (DE REY-PAILLADE), A., ii, 678.
 with yeast extract (AHRENS), A., ii, 610.
 alcoholic, rate of (O'SULLIVAN), A., ii, 230.
 butyric acid (SCHATTENFROH and GRASSBERGER), A., ii, 230.
 schizomycetic (EMMERLING), A., ii, 742.
- Ferments**. See Enzymes and Yeast.
- Ferric compounds**. See under Iron.
- Ferricyanides**, oxidation of the nature of dehydrogenation by means of (ÉTARD), A., i, 301.
- Ferro-chromium**, estimation of silicon in (TATE), A., ii, 313.
- Ferrocyanides**, estimation of, in spent gas-purifying material (RIEHELMANN), A., ii, 111.
- Ferro-silicons**, presence of iron silicide in (LEBEAU), A., ii, 729.
- Ferrous compounds**. See under Iron.
- Fibres**, crude, König's process for the estimation of, in fodders (KELLNER, HERING, and ZAHN), A., ii, 250.
 vegetable, detection of (JANDRIER), A., ii, 177.
- Fibrin**, crystallised (MAILLARD), A., i, 266.

- Fibrin**, composition of (PICK), A., i, 68.
 digestion of, by papain (HARLAY), A., i, 419, 420.
 products of the peptic digestion of (PICK), A., i, 68.
- Filicic acid** (HAUSMANN), A., i, 49.
- Filters**, asbestos (LOHSE and THOMAS-CHIEWSKI), A., ii, 508.
- Fir-wood** (*Pinus Abies*), oil of (KLASON), A., i, 676.
- Fisetol diethyl ether** (v. KOSTANECKI and FEUERSTEIN), A., i, 355.
- Fish**, tinned (RÖSSING), A., ii, 513.
- Fish oils**, analysis of (BULL), A., ii, 250, 325.
- Flames**, coal gas, properties of (TECLU), A., ii, 71.
- o-Flavaniline** (2-o-aminophenyl-4-methyl-quinoline) and its acetyl derivative (CAMPS), A., i, 115.
- Flavaspidic acid** (HAUSMANN), A., i, 49.
- Flavinduline**, *mono*- and 2:7-*di*-nitro- and *mono*- and 2:7-*di*-amino- and their salts (KEHRMANN and KIKINE), A., i, 61.
 bromide, *mono*- and 2:7-*di*-amino- (KEHRMANN and KIKINE), A., i, 61.
- Flavindulines**, nitro- and amino- and their salts (KEHRMANN and STOFFEL), A., i, 254.
- Flavone**, synthesis of (v. KOSTANECKI, TAMBOUR, and BONGARTZ), A., i, 239.
 derivatives (v. HARPE and v. KOSTANECKI), A., i, 237; (v. KOSTANECKI and SCHMIDT), A., i, 238; (v. KOSTANECKI and TAMBOUR), A., i, 239; (BLUMSTEIN and v. KOSTANECKI), A., i, 448; (CZAKOWSKI, v. KOSTANECKI, and TAMBOUR), A., i, 504.
- Flax**. See Agricultural Chemistry.
- Flesh** and proteids, energy-value of (PFLÜGER), A., ii, 417.
- Flocculation** of liquids (SPRING), A., ii, 713.
- Florencite** from Brazil (HUSSAK and PRIOR), A., ii, 601; (PRIOR), A., ii, 602.
- Flour**, gluten constituents of (GUESS), A., ii, 584.
- Fluids**, specific heat of (AMAGAT), A., ii, 525.
- Fluoran**, *dichlorodithio*-, and *dithio*- (MEYER; MEYER and SZANECKI), A., i, 660.
- Fluorene**, refraction of (CHILESOTTI), A., i, 339.
 condensation product of (THIELE), A., i, 347.
- Fluoreneoxalic acid** and its ethyl ester (WISLICIENUS), A., i, 346.
- Fluorescein**, nitro-derivatives, preparation and constitution of (HEWITT and PERKINS), T., 1324; P., 1900, 178.
mono- and *di*-thio- (MEYER; MEYER and SZANECKI), A., i, 660.
- Fluorescence** and chemical constitution (HEWITT and PERKINS), T., 1324; P., 1900, 178; (HEWITT), P., 1900, 3; A., ii, 518.
 of metallic compounds under the influence of Röntgen and Becquerel rays (BARY), A., ii, 330.
- Fluorine** in Swedish phosphorites (ANDERSSON and SAHLBOM), A., ii, 148.
 presence of, in teeth and bones (HARMS), A., ii, 29.
 in the mineral waters of Spain and Portugal (FERREIRA DA SILVA and D'AGUIAR), A., ii, 28.
 electrochemical properties of (ABEGG and IMMERWAHR), A., ii, 256.
 action of, on glass (MOISSAN), A., ii, 140.
- Hydrofluoric acid** (*hydrogen fluoride*), volumetric composition of (MOISSAN), A., ii, 271.
 heat of dissociation of (ABEGG), A., ii, 190.
 action of, on glass (MOISSAN), A., ii, 140.
- Fluorohyperborates** (MELIKOFF and LORDKIPANIDZE), A., ii, 138, 139.
- Fluorine**, detection of, in wine (PARIS), A., ii, 572.
- Fodders**, König's process for the estimation of crude fibre free from pentosan in (KELLNER, HERING, and ZAHN), A., ii, 250.
 See also Agricultural Chemistry.
- Fœtus**, human, fixation of alkali bases in the, and mineral statics of the, during the last five months of intrauterine life (HUGOUNENQ), A., ii, 418, 490.
- Food**, horseflesh as (PFLÜGER), A., ii, 490.
 sugar as (STROHMER), A., ii, 490.
 detection of coal-tar colouring matters in (WINTON), A., ii, 776.
 detection of "saccharin" in (TRUCHON), A., ii, 377; (DE BRÉVANS), A., ii, 635.
 estimation of absorbable proteids in (BÜLOW), A., ii, 459.
- Food preservatives**, boric acid and formaldehyde as (RIDEAL and FOULERTON), A., ii, 560; (HEHNER), A., ii, 561.
- Formaldehyde**, formation of (FENTON), T., 1297; P., 1900, 148.

- Formaldehyde**, formation of, in plants (POLLACCI), A., ii, 160, 426.
 action of, on acridine and quinoline derivatives, and on alkaloids (KOENIGS), A., i, 189.
 action of, on anilides (GOLDSCHMIDT), A., i, 285, 436.
 action of, on β -aromatic hydroxylamines (BAMBERGER), A., i, 341.
 condensation of, with ethyl malonate (BOTTOMLEY and PERKIN), T., 294; P., 1900, 16.
 action of, on methylaniline (GOLDSCHMIDT), A., i, 436.
 action of, on amines of the naphthalene series (MORGAN), T., 814; P., 1900, 131.
 action of, on *o*-nitroaniline (MEYER and ROHMER), A., i, 222.
 action of potassium cyanide on (KOHN), A., i, 205.
 and *isobutaldehyde*, an aldol from (WESSELY), A., i, 428.
 compounds of, with bromal (PINNER), A., i, 427.
 compounds of, with substances belonging to the sugar group (ALBERTA VAN EKENSTEIN and DE BRUYN), A., i, 619.
 as a food preservative (RIDEAL and FOULERTON), A., ii, 560; (HEHNER), A., ii, 561.
 physiological action of (BRUNI), A., ii, 359.
 comparison of some tests for (PILNASHY), A., ii, 453.
 detection of (POLLACCI), A., ii, 160.
 detection and estimation of (CLOWES and TOLLENS), A., ii, 56.
 estimation of (VEREIN FÜR CHEMISCHE INDUSTRIE IN MAINZ), A., ii, 326; (WOLFF), A., ii, 373.
 estimation of, in the air (WINTGEN), A., ii, 117.
Paraformaldehyde, reactions of (HENRY), A., i, 537.
Formaldehydophenylbenzylhydrazone (RUFF and OLENDORFF), A., i, 77.
Formazylbenzenesulphonic acids, sodium salts of (FICHTER and SCHIESS), A., i, 366.
Formhydroxamic acid (BIDDLE), A., i, 138.
Formhydroxamoxime dibenzyl ether, and *p*-*di*-bromo- and -chloro-, and their acetyl derivatives (SCHROETER and PESCHKES), A., i, 485.
Formic acid, mixed anhydrides of (BÉHAL), A., i, 580.
 new hydroxylamine derivatives of (SCHROETER and PESCHKES), A., i, 485.
 estimation of (BÉHAL), A., i, 581.
Formic acid, estimation of, in presence of acetic acid (SPARRE), A., ii, 449.
Formic acid, methyl and ethyl esters, heat of combustion and of formation of (BERTHELOT and DELÉPINE), A., ii, 334.
 propyl ester, rate of hydrolysis of, at various temperatures (PRICE), A., ii, 528.
Formopyrine (*diantipyrimethane*), tetraiodide of, and compounds of, with phenols (PATEIN), A., i, 530.
Formoxime acetate and benzoate, chloro- (BIDDLE), A., i, 138.
 nitrate (BAMBERGER and MÜLLER), A., i, 145.
2-Formylaminoanisole, 5-chloro- (DIEPOLDER), A., i, 191.
o-**Formylaminophenol** (BÉHAL), A., i, 581.
Formylanilide, bromo- and chloro-derivatives, and their acetyl and benzoyl derivatives (CHATTAWAY, ORTON, and HURTLEY), A., i, 151.
o-bromo- and -chloro-, nitrogen bromides and chlorides from (CHATTAWAY and ORTON), T., 800.
o-mono- and 3:5-*di*-bromo- and -chloro- (CHATTAWAY and ORTON), A., i, 643.
Formyl-*o*-anisidine (DIEPOLDER), A., i, 191.
1-Formylnaphthalide, 4-bromo- (CHATTAWAY and ORTON), A., i, 643.
2-Formylnaphthalide, 1-chloro- (CHATTAWAY, ORTON, and HURTLEY), A., i, 152.
Formylphenylacetic acid, ethyl ester, α - and β - (BRÜHL), A., i, 497.
 melting point of (WOLF), A., i, 345.
 esters, isomerism of (WISLICENUS), A., i, 597.
Formylphenylhydrazide, nitroso-, and **Formylphenylbenzylidenetriazan** (WOHL), A., i, 698.
Fractional distillation in a vacuum, receiver for (FOGETTI), A., ii, 535.
 under reduced pressure, apparatus for (ODDO), A., ii, 131.
 lecture experiment for demonstrating (RAIKOW), A., ii, 648.
Fractional precipitation of neutral salts, theory of the (FINDLAY), A., ii, 716.
Frankia subtilis, an organism producing nodules (HILTNER), A., ii, 426.
Freezing point, abnormal depressions of the, produced by chlorides and bromides of the alkaline earths (JONES and CHAMBERS), A., ii, 262.
 depression of the, by mixtures of electrolytes (BARNES), A., ii, 526.

- Freezing point** of aqueous solutions of acetic acid (DAHMS; DE COPPET), A., ii, 65.
 of aqueous solutions of non-electrolytes (LOOMIS), A., ii, 335.
 of hydrates of sulphuric acid (v. BIRON), A., ii, 74.
 of water, minimum in the molecular lowering of, produced by acids and salts (CHAMBERS and FRAZER), A., ii, 526.
 in dilute solutions, method of determining (WILDERMANN), A., ii, 262.
 in dilute solutions, errors in the determination of (WILDERMANN), A., ii, 131, 191; (BATELLI and STEFANINI), A., ii, 709.
- Freezing point curves** of alloys of antimony and tin (REINDERS), A., ii, 731.
 of mixed crystals (ROOZEBOOM), A., ii, 132; (VAN EIJK), A., ii, 133; (HISSINK), A., ii, 339; (ADRIANI), A., ii, 463.
 of isomorphous mixtures (BRUNI and GORNI), A., ii, 197.
 for water containing hydrogen chloride and phenol (EMERY and CAMERON), A., ii, 335.
- Freezing point determinations** of the electrolytic dissociation of potassium and sodium sulphates (ARCHIBALD), A., ii, 65.
- Freezing point.** See also Cryoscopy.
- Friction, internal.** See Viscosity.
- Friedel-Crafts' reaction** (PERRIER), A., i, 331; (BOESEKEN), A., i, 349; (KRONBERG), A., i, 502.
- Frog,** respiration in the (ATHANASIU), A., ii, 288.
 nitrogenous metabolism in the (v. MORACZEWSKI), A., ii, 31.
- d-Fructose.** See Lævulose.
- Fruit products,** detection of coal-tar colouring matters in (WINTON), A., ii, 776.
- Fruit trees.** See Agricultural Chemistry.
- Fucose** from tragacanth (WIJTSOR and TOLLENS), A., i, 207.
- Fulminic acid,** relation of, to isocyanic acid (SCHOLL and KACER), A., i, 218.
 mercury salt, constitution and synthetic application of (SCHOLL), A., i, 144.
- Fulvene** (THIELE), A., i, 299.
- Fumaric acid** (*ethylenedicarboxylic acid*), ethyl ester, condensation of, with benzyl cyanide (HENZE), A., i, 347.
- Fumaric acid,** chloro-, ethyl ester, condensation of, with benzamidine and guanidine (RUHEMANN and STAPLETON), T., 808; P., 1900, 122.
- Fumaric acid,** chloro-, ethyl ester, action of sodium phenoxide on (RUHEMANN and BEDDOW), T., 1123; P., 1900, 165.
- Fungi,** action of solutions of salts of fatty acids on (LÖVINSON), A., ii, 745.
- Furfuraldehyde** from beetroot and molasses (ANDRLIK), A., i, 110.
 action of Caro's reagent on (CROSS, BEVAN, and BRIGGS), A., i, 682.
 condensation of, with isobutaldehyde (LINDAUER), A., i, 305.
 detection of, in beer (HEIM), A., ii, 327.
 estimation of (CORMACK), T., 990; P., 1900, 156.
- Furfuraldehyde-p-nitrophenylhydrazone** (FEIST), A., i, 569.
- Furfuriminomethyl ether,** rearrangement of (WHEELER and ATWATER), A., i, 294.
- Furfurine,** an isomeride of (MILLINGTON and HIBBERT), P., 1900, 161.
- Furfuroids** of plant tissues (CROSS, BEVAN, and REMINGTON), A., ii, 611.
 physiological importance of, in sugar-beets (STOKLASA), A., ii, 100.
 distribution and importance of, in soils (STOKLASA), A., ii, 40.
- Furfuroylacetic acid** (SANDELIN), A., i, 305.
- Furfurylacrylic acid** and the *allo*-acid, sublimation point of (LIEBERMANN and RIEBER), A., i, 648.
- Furfurylcarbinylsuccinic acid** (SANDELIN), A., i, 306.
- β -Furfuryl- α -p-chlorophenylacrylonitrile** (v. WALTHER and WETZLICH), A., i, 438.
- Furfuryl- α -cyanoacrylic acid,** ethyl ester (GUARESCHI), A., i, 53.
- 4-Furfuryldihydrodithiazine,** 2:6-di-cyano- (HELLSING), A., i, 518.
- γ -Furfuryl- $\beta\beta$ -dimethylpropylene glycol** and its diacetate (LINDAUER), A., i, 305.
- Furfurylidene-bis-1-phenyl-3-methyl-5-pyrazolone** (TAMBOR and LICINSKI), A., i, 365.
- γ -Furfurylpropane- $\alpha\beta\beta$ -tricarboxylic acid,** and its ethyl ester (SANDELIN), A., i, 306.
- β -Furfurylpropionic acid,** β -cyano-, and its ethyl ester (SANDELIN), A., i, 306.
- Furfurylsuccinamic acid** and its dibenzylidene derivative (SANDELIN), A., i, 306.
- Furfurylsuccinic acid** (SANDELIN), A., i, 306.
- Furnace,** tubular, giving fixed temperatures (GAUTIER), A., ii, 258.

Fusel oil, estimation of, in alcoholic liquids (ADAM), A., ii, 53; (BECKMANN and BRÜGGEMANN), A., ii, 175.

G.

Gadolinite from Batum (TSCHERNIK), A., ii, 551.

Gadolinium (DEMARÇAY), A., ii, 597.

and its compounds and salts (BENEDICKS), A., ii, 209.

Galactan, $C_6H_{10}O_5$ (EMMERLING) A., i, 743.

Galactase, the proteolytic ferment of milk, its properties, and action on the proteids of milk (BARCOCK and RUSSELL; v. FREUDENREICH), A., i, 712.

Galactoarabinose and its osazone and phenylbenzylhydrazone (RUFF and OLLENDORFF), A., i, 476.

Galactosamine, a new amino-sugar (SCHULZ and DITTHORN), A., i, 478.

Galactose from the albumen of the St. Ignatius bean and nux vomica (BOURQUELOT and LAURENT), A., ii, 498, 611.

from gulonic acid (FISCHER and RUFF), A., i, 539.

production of, by an enzyme (BOURQUELOT and HÉRISSEY), A., ii, 35, 233; (HÉRISSEY), A., ii, 561.

oxidation of, by hydrogen peroxide (MORRELL and CROFTS), T., 1219.

d-**Galactose**, degradation of (RUFF and OLLENDORFF), A., i, 476.

Galbanum, examination of (DIETERICH), A., ii, 118.

Galena, analysis of (MENNICKE), A., ii, 761.

Gallein and its esters, ethers, and acyl derivatives (ORNDORFF and BREWER), A., i, 447.

Gallic acid, thermochemistry of (MASSEL), A., i, 499.

and tannic acid, estimation of (JEAN), A., ii, 632.

Gallin and its acetate and ether (ORNDORFF and BREWER), A., i, 448.

Galvanic elements. See Cells under Electrochemistry.

Ganglia, sympathetic, physiological action of extracts of (CLEGHORN), A., ii, 557.

Garnet, new variety of (MACLEOD and WHITE), A., ii, 663.

Gas, liquefaction of a, by "self-cooling" (NEWTH), P., 1900, 87.

fuel and illuminating, apparatus for the analysis of (THOMAS), A., ii, 169.

Gas, illuminating, estimation of benzene vapour in (PFEIFFER), A., ii, 173.

water, purification of, from iron carbonyl (VAN BREUKELEVEEN and TER HORST), A., ii, 348.

Gas analysis, technical (SCHMIDT), A., ii, 508.

burette for (WHITE), A., ii, 571.

Gas absorption apparatus (GAUTIER), A., ii, 366.

Gas washing apparatus (SCHALLER), A., ii, 48.

Gases, combustible, of atmospheric air (GAUTIER), A., ii, 537, 538, 720.

from the springs of Mont-Dore (PARMENTIER and HURION), A., ii, 415.

from the springs of Salsomaggiore (NASINI and SALVADORI), A., ii, 415.

influence of slight impurities on the spectra of (LEWIS), A., ii, 1, 701.

electrical conductivity in, traversed by cathode rays (McLENNAN), A., ii, 587.

velocity of ions produced in, by Röntgen rays (ZELENY), A., ii, 587.

electrolytic, electrification of (KÖSTERS), A., ii, 4.

thermal conductivity of (SMOLUCHOWSKI and v. SMOLAN), A., ii, 63.

propagation of condensation waves in heated (LE CHATELIER), A., ii, 645.

determination of the molecular weight of, from their density (VAN DER WAALS), A., ii, 134.

relative rates of effusion of (DONNAN), A., ii, 390.

permanent, phenomena of effusion of (EMDEN), A., ii, 10.

apparatus for measuring volume of evolved (BENOIT), A., ii, 435.

apparatus for measuring evolved, at constant volume (JOB), A., ii, 434.

Gas generator, constant economical (KOENIG), A., ii, 718.

Gas-liquor, ammoniacal, estimation of carbon dioxide in (CHEVALER), A., ii, 170.

Gaseous mixtures, liquefaction of (CAUBET), A., ii, 191, 390, 646.

reactions in chemical kinetics (BODENSTEIN), A., ii, 12.

Gasometer, new (RIBAN), A., ii, 340.

Gastric juice, estimation of chlorine in (MEILLERE), A., ii, 509.

estimation of combined hydrochloric acid in (COHNHEIM and KRIEGER), A., ii, 508, 778.

See also Stomach.

Gattermann's and Sandmeyer's reactions, electrolytic modification of (VOTOČEK and ZENÍŠEK), A., i, 19.

- Gaultherin** and **Gaultherase** from *Spiræas* (BEYERINCK), A., i, 108.
- Gelatin**, properties of (MÖRNER), A., i, 128.
 equilibrium between water, alcohol and (HARDY), A., ii, 396.
 condition of substances formed in, insoluble in water (DE BRUYN), A., ii, 136, 717.
 as a proteid-sparing food (KIRCHMANN), A., ii, 669.
- Genistein** and its methyl and ethyl ethers and their acetyl derivatives and decomposition products (PERKIN and HORSFALL), T., 1310; P., 1900, 182.
- Gentiopicrotin**, preparation of (BOURQUELOT and HÉRISSEY), A., i, 511.
- isoGeranic acid*, synthesis of (TIEMANN), A., i, 275.
- Geraniol**, estimation of, in oil of citronella (SCHIMMEL and Co.), A., ii, 175.
- isoGeraniolene* (TIEMANN), A., i, 275.
- Geranium oil**, constituents of (JEAN-CARD and SATIE), A., i, 242.
- Germination**. See **Agricultural Chemistry**.
- Gila monster**, physiological action of the poison of the (VAN DEUBURG and WIGHT), A., ii, 677.
- Ginger**, analysis of (CLAYTON), A., ii, 60.
 oil of, constituents of (v. SODEN and ROJAHN), A., i, 605.
- Glacial deposits** from Norway (HOLLAND and DICKSON), A., ii, 151.
- Glands**, fat in (NIKOLAIDES), A., ii, 153.
 lymphatic, chemistry of the (MENDEL and NAKASEKO), A., ii, 556.
 submaxillary, gaseous metabolism of the (BARCROFT), A., ii, 417.
 thymus, histon-like substances from (FLEROFF), A., i, 71.
 thymus and thyroid, iodine in the (MENDEL), A., ii, 152.
 thyroid, chemistry and physiology of the (OSWALD), A., ii, 358.
 effect of feeding with, on monkeys (EDMONDS), A., ii, 224.
 as a poison-removing organ (BLUM), A., ii, 224.
 of dogs, iodine in the (GLEY and BOURCET), A., ii, 555.
 of infants, variations of the iodine of the (CHARRIN and BOURCET), A., ii, 419.
 of sheep (SUIFFET), A., ii, 671.
- Glandular secretions**, defence of the organism against the toxic properties of (CHARRIN and LEVADITI), A., ii, 224.
- Glass**, composition of (ZULKOWSKI), A., ii, 595.
 bottle, composition of (DRALLE), A., ii, 482; (ZULKOWSKI), A., ii, 654.
 action of fluorine and hydrogen fluoride on (MOISSAN), A., ii, 140.
- Glass tubes**, calibration of (HULETT), A., ii, 397.
- Glauberite**, formation of, at 25° (VAN'T HOFF and CHIARAVIGLIO), A., ii, 284.
- Glaucochroite** from New Jersey (PENFIELD and WARREN), A., ii, 88.
- Glauconic acids** (DOEBNER), A., i, 313.
- Gluconasturtiin** (GADAMER), A., i, 49.
- Gluconic acid**, formation of (NIEBEL), A., i, 540.
- Glucoproteids** of white fibrous tissue (GIES and CUTTER), A., ii, 293.
- Glucosamine** (*chitosamine*) hydrochloride, behaviour of, in the organism (OFFER and FRÄNKEL), A., ii, 294.
- d-Glucose*. See **Dextrose**.
- l-Glucosphenylbenzylhydrazone* (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- Glucosides** containing thiocarbimides (TER MEULEN), A., i, 511.
 from parsley (PERKIN), T., 416; P., 1900, 44; (VONGERICHTE), A., i, 681.
 from senna (TSCHIRCH and HIEFE), A., i, 681.
 in tobacco leaves (BEHRENS), A., ii, 239.
 from xanthorhamnin (C. and G. TANRET), A., i, 185.
 sugars of some (VOTOČEK), A., i, 355.
 $C_{29}H_{46}O_{19}$ (Wakamba arrow poison), (BRIEGER), A., i, 243.
- Glucosides**. See also:—
 Agoniadin.
 Apigetrin.
 Anthraglucosenmin.
 Apin.
 Consolidin.
 Curangin.
 Gaultherin.
 Gentiopicrotin.
 Gluconasturtiin.
 Indican.
 Luteolin.
 Methyleneglucose.
 Myricetin.
 Myrosin.
 Phloridzin.
 Plumieride.
 Salinigrin.
 Spiræin.
 Strophanthin.
 ψ -Strophanthin.
 Vitexin.
 Xanthorhamnin.

- Glue**, distinction between, and dextrin or gum arabic (BORNTRÄGER), A., ii, 631.
analysis of (FAHRION), A., ii, 59.
- Glutamic acid**, detection of, in animal proteids by sulphuric acid (KUTSCHER), A., i, 67.
- Glutaric acid**, (*n-pyrotartaric acid*; *propanediacarboxylic acid*), formation of (BOTTOMLEY and PERKIN), T., 300; P., 1900, 16.
methylanilides, and methyl ester of (MEERBURG), A., i, 144.
 β -bromo- (SSEMENOFF), A., i, 10.
bromo-, ethyl ester, action of alcoholic potash on (BOWTELL and PERKIN), P., 1899, 241.
- Glutaric derivatives**, synthesis of (GUARESCHI and GRANDE), A., i, 111; (MINOZZI), A., i, 406.
- Gluten meal**. See Agricultural Chemistry.
- Glutineptone** hydrobromide and hydriodide (PAAL), A., i, 467.
- Glyceric acid**, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 72; P., 1899, 224.
- Glycerol** (*glycerin*), preparation of acrylic acid from (WÖHLK), A., i, 425.
some properties of (STRUVE), A., ii, 446.
estimation of, in fats and soaps (JEAN), A., ii, 694.
- Glycerophosphoric acid**, salts of (GUÉDRAS), A., i, 75.
- Glycerophosphoric acids**, velocity and limits of the formation of (IMBERT and BELUGOU), A., i, 130.
- Glyceryl** acetodiformate (BÉHAL), A., i, 581.
diiodohydrin, decomposition of (CHARON and SÉAILLES), A., i, 472.
diisopropyl, *ditert.butyl*, *dicapryl*, *dioctyl*, and *dibenzyl* ethers (ZUNINO), A., i, 535.
nitrate, decomposition of, by alkalis (BERTHELOT), A., i, 620.
- Glycine** (*glycocine*; *aminoacetic acid*), new derivative of (BALBIANO and TRACCIATTI), A., i, 632.
- Glycocholic acid**, Hüfner's method of preparing pure (OSBORNE), A., ii, 419.
- Glycogen**, origin of, from proteid (SCHÖNDORFF), A., ii, 740.
preparation of (GAUTIER), A., i, 81; (BENDIX and WOHLGEMUTH), A., ii, 491.
amount of, in an organ, not extractable by water (NERKING), A., ii, 740.
- Glycogen**, formation of, after inulin feeding (NAKASEKO), A., ii, 670.
transformation of fat into (BOUCHARD and DESGREZ), A., ii, 418.
oxidation product of, with bromine (NIEBEL), A., i, 540.
hepatic, increase of, during pregnancy (CHARRIN and GUILLEMONAT), A., ii, 292.
estimation of (GAUTIER), A., i, 81; (PFLÜGER), A., ii, 581.
estimation of, in horseflesh and preserved meats (BREUSTEDT; HAYWOOD), A., ii, 321.
- Glycol**. See Ethylene glycol.
- Glycollic acid** and its calcium salt (BÜTTINGER), A., i, 582.
oxidation of, in presence of ferrous salts (FENTON and JONES), T., 70; P., 1899, 224.
phenyl ester, reactions of (MOREL), A., i, 158.
- Glycollic aldehyde**, formation of α - and β -acrose from (JACKSON), T., 129; P., 1899, 238.
degradation of (FENTON), T., 1294; P., 1900, 148.
- Glycollic aldoxime** (FENTON), T., 1296; P., 1900, 148.
- Glycolloglycollic acid** (BÜTTINGER), A., i, 582; (WOLFF and LÜTTRINGHAUS), A., i, 583.
- Glycollonitrile**, acetyl derivative, preparation of, and action of ammoniacal silver oxide on (FENTON), T., 1297; P., 1900, 148.
- Glycuronic acid** in normal urine (MAYER), A., ii, 155; (MAYER and NEUBERG), A., ii, 421.
phenylhydrazine derivatives of, and its detection (MAYER), A., i, 204.
- Glycyrrhiza glabra*, oil of (HAENSEL), A., i, 107.
- Glycyrrhizin**, estimation of, in liquorice extract (HAFNER), A., ii, 328, 775.
- Glyoxal**, condensation of, with *isobutaldehyde* (v. HORNBOSTEL and SIEBER), A., i, 206.
- Glyoxalin-red**, formation of (RUHEMANN and STAPLETON), T., 809; P., 1900, 122.
- Glyoxime N-ethers**, aromatic (BAMBERGER), A., i, 341; (BAMBERGER and TSCHIRNER), A., i, 342.
- Glyoxylic acid** and its salts (BÜTTINGER), A., i, 582.
preparation of (DOEBNER), A., i, 473.
- Gold**, crystallisation of (DITTE), A., ii, 549.
- Gold alloys** with aluminium (HEYCOCK and NEVILLE), A., ii, 549.

- Gold alloys** with platinum, analysis of (PRIWOZNIK), A., ii, 111.
- Gold compounds** with mercury, isomorphous (BEHRENS), A., ii, 213.
- Gold carbide** (MATHEWS and WATERS), A., i, 323.
- chloride, hydrolysis of (KOHLEAUSCH), A., ii, 408.
- aureichlorides, abnormal, of organic bases (FENNER and TAFEL), A., i, 111.
- Gold, detection and estimation of:—**
- Gold**, detection of minute quantities of, in ores (DÖRING), A., ii, 371, 445.
- estimation of, iodometrically (GOOCH and MORLEY), A., ii, 110.
- estimation of small quantities of platinum in (RÖSSLER), A., ii, 733.
- Gonococcus** and its toxin (DE CHRISTMAS), A., ii, 742.
- Graftonite** from New Hampshire (PENFIELD), A., ii, 216.
- Grain.** See Agricultural Chemistry.
- Gramineæ.** See Agricultural Chemistry.
- Granatan-nucleus**, optical properties of the (PICCININI), A., i, 249.
- Granulite** from Cape Marsa (DUPARC and PEARCE), A., ii, 219.
- Grape Sugar.** See Dextrose.
- Grapes**, estimation of malic acid in (ORDONNEAU), A., ii, 250.
- Graphite** as a compressed powder, electrical conductivity of (STREINTZ), A., ii, 641.
- specific heat of, at low temperatures (BEHN), A., ii, 259.
- estimation of, by loss (AUCHY), A., ii, 313.
- Graphite mineral** from Moravia (KOVÁŘ), A., ii, 147.
- Graphitic acid** and ψ -**Graphitic acid** (STAUDENMAIER), A., ii, 15.
- Guaicol**, condensation of, with ethyl phenylpropionate (RUHEMANN and STAPLETON), T., 1180; P., 1900, 168.
- sodium, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 396.
- estimation of, in wood-tar creosote (KEBLER), A., ii, 176.
- Guaicol**, tri- and tetra-chloro-, and tetrabromo-, action of nitric acid on (COUSIN), A., i, 179, 487.
- isonitroso-, ethers, and benzoyl and bromo-derivatives of (BRIDGE and MORGAN), A., i, 158.
- Guaicolcarboxylic acid**, methyl ester, nitro- and amino- (EINHORN), A., i, 440.
- Guaicoxy-acetyl-, -malonyl-, and -propionyl-phenetidine** (BISCHOFF), A., i, 396.
- α -Guaicoxy-propionic, -n- and -isobutyric, -malonic, and -isovaleric acids** and their ethyl esters (BISCHOFF), A., i, 396.
- Guanidine**, condensation of, with the ethyl esters of acetylenedicarboxylic and chlorofumaric acids (RUHEMANN and STAPLETON), T., 805; P., 1900, 122.
- action of, on ethyl phenylpropionate (RUHEMANN and STAPLETON), T., 242; P., 1900, 12.
- preparation of carbamide from (FLEMING), A., i, 280.
- derivatives of diacetoneamine (TRAUBE and SCHALL), A., i, 118.
- Guanine**, new synthesis of (TRAUBE), A., i, 416.
- Guan.** See Agricultural Chemistry.
- Gulonic acid**, conversion of, into xylose and galactose (FISCHER and RUFF), A., i, 539.
- l-Gulonic acid**, compounds of, with benzaldehyde and formaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- Gum** in elm galls (PASSERINI), A., ii, 427.
- of *Grevillea robusta* (RÆSER and PUAUX), A., i, 82.
- Gum tragacanth** (HILGER and DREYFUS), A., i, 379.
- arabinose, fucose and xylose from (WIDTSCHE and TOLLENS), A., i, 207.
- Gun-cotton**, tests for stability of (HOITSEMA), A., ii, 55.
- Guttapercha**, analysis of (BORNTREAGER), A., ii, 775.
- Gymnite** from Moravia (KOVÁŘ), A., ii, 148.
- Gypsum**, setting of (ZULKOWSKI), A., ii, 76.
- and anhydrite deposits at Oulx, Piedmont, minerals in the (COLOMBA), A., ii, 216.
- See also Calcium sulphate.

H.

- Hæmatic acid** (KÜSTER), A., i, 68, 319; (KÜSTER and KÖLLE), A., i, 69.
- Hæmatin**, neutral (ARNOLD), A., i, 318.
- preparation and oxidation of (KÜSTER), A., i, 68.
- obtained by the use of pepsin-hydrochloric acid (v. ZEYNEK), A., i, 711.
- decomposition products of (KÜSTER), A., i, 68, 319.
- Hæmatoporphyrin** and its salts and ethers (NENCKI and ZALESKI), A., i, 710.

- Hæmatoporphyrin**, preparation and oxidation of (KÜSTER and KÖLLE), A., i, 69.
 spectrum of (ARNOLD), A., i, 127.
 action of bromine on (MARCHELEWSKI and SCHUNCK), T., 1091; P., 1900, 149.
- Hæmatotoxin**, action of, on man (METCHNIKOFF and BESREKA), A., ii, 741.
- Hæmatoxylin** (GILBODY and PERKIN), P., 1899, 241.
 constitution of (PERKIN and YATES), P., 1900, 108; (V. KOSTANECKI and FEUERSTEIN), A., i, 356.
 as a photographic developer (LEPETIT), A., ii, 519.
- Hæmatoxylin campechianum*, constituents of (PERKIN), T., 426; P., 1900, 45.
- Hæmin** and its acetyl derivative and their ethers (NENCKI and ZALESKI), A., i, 709.
- Hæmin crystals**, preparation of (V. ZEYNEK), A., i, 711.
- Hæmochromogen** obtained by the use of pepsin-hydrochloric acid (V. ZEYNEK), A., i, 711.
- Hæmoglobin**, formation of, functions of the nucleus in relation to the (STASSANO), A., ii, 666.
 absorption of oxygen and carbon monoxide by (DE SAINT-MARTIN), A., ii, 665.
 action of chloroform and chloral hydrate on (FORMÁNEK), A., i, 532.
 of the horse, amount of iron in the (LAPICQUE and GILARDONI), A., i, 467.
 assimilation of iron by, and estimation of (ABDERHALDEN), A., ii, 223, 289, 416.
- Methæmoglobin**, formation of (V. ZEYNEK), A., i, 196; (HÜFNER), A., i, 267.
 cyano- and photo- (HALDANE), A., i, 318.
- Oxyhæmoglobin** crystals from pigeons' blood (SCHWANTKE), A., i, 711.
- Hæmorrhage**, severe, infusion after (DAWSON), A., ii, 291.
 and transfusion in dogs (DAWSON), A., ii, 291, 417.
- Halogen compounds**, organic, decomposition of, by sodium (LÖWENHERZ), A., ii, 338.
- Halogens**, specific gravity of the, at their boiling points (DRUGMAN and RAMSAY), T., 1228; P., 1900, 172.
 law governing the elimination of, from the benzene ring (KLAGES and LIECKE), A., i, 387.
 displacement of, from halogenated fatty acids (DE BARR), A., i, 76.
- Halogens** and hydroxyl, isomorphous replacement of (FELS), A., i, 338.
 estimation of, in organic compounds (BERTHELOT; VALEUR), A., ii, 172.
- Hamlinite** (HUSSAK and PRIOR), A., ii, 601; (PRIOR), A., ii, 602.
- Hancockite** from New Jersey (PENFIELD and WARREN), A., ii, 88.
- Hardystonite** from Franklin furnace, New Jersey (WOLFF), A., ii, 735.
- Hay**. See Agricultural Chemistry.
- Hazelnut oil** (HANUS), A., ii, 101.
- Heart**, action of caffeine and theobromine on the (BOCK), A., ii, 424.
 action of nicotine on the (WINTERBERG), A., ii, 424.
 action of the toxic products of the typhoid bacillus on the (KEMP and DEWEY), A., ii, 559.
 value of calcium and potassium ions on the (LOEB), A., ii, 491.
 mammalian, excised, action of oxygen on a (STRECKER), A., ii, 491.
- Heat**. See Thermochemistry.
- Hedenbergite** from Dartmoor (BUSZ), A., ii, 217.
 from Japan (JIMBÔ), A., ii, 87.
- Heliopora cerulea*. See Coral.
- Helium**, relative rates of effusion of, and of other gases (DONNAN), A., ii, 390.
 solubility of, in water (ESTREICHER), A., ii, 205.
- Hemicelluloses**, estimation of, in plants (KLEIBER), A., ii, 630.
- Hemimorphite** from New Jersey (CLARKE and STEIGER), A., ii, 24.
- Hemipinic acid**, thermochemistry of (LEROY), A., ii, 261.
- Metahemipinic acid** (GILBODY and PERKIN), P., 1899, 241; (GILBODY, PERKIN, and YATES; PERKIN and YATES), P., 1900, 107.
- Hemp**. See Agricultural Chemistry.
- Heptanaphthene**. See Methylcyclohexane.
- Heptane** (*ββ*-dimethylpentane; trimethylpropylmethane) (MARKOWNIKOFF), A., i, 469.
- Heptane** (triethylmethane) nitration of (KONOWALOFF and KOTSINA), A., i, 324.
- Heptanes** in Grosuy naphtha (CHARITSCHKOFF), A., i, 74.
- cyclo***Heptanecarboxylic acid**, tribromo- (BRAREN and BUCHNER), A., i, 292.
- Heptanedicarboxylic acids**. See:—
 Azelaic acid.
 Methylisopropylglutaric acids.
 Tetramethylglutaric acids.
- Heptanetricarboxylic acid**. See *αββ*-Trimethylbutane-*ααδ*-tricarboxylic acid.

- cyclo***Heptanone** (*suberone*) peroxide (v. BAEYER and VILLIGER), A., i, 329.
- cyclo***Heptanoneisooxime** (*suberoneisooxime*) and its salts (WALLACH), A., i, 45.
- and its hydrolysis (WALLACH), A., i, 590.
- cyclo***Heptatrienecarboxylic acids**, α - and β - (α - and β -isophenylacetic acids), affinity constants of (ROTH), A., ii, 590.
- cyclo***Heptenecarboxylic acids**, Δ^1 - and Δ^2 - (BRAREN and BUCHNER), A., i, 292.
- affinity constants of (ROTH), A., ii, 590.
- Heptenoic acids** (WALLACH), A., i, 45, 590.
- Heptinene** ($\beta\beta$ -dimethyl- $\beta\delta$ -pentadiene) (GRIGNARD), A., i, 382.
- Heptioic acid** (α -isopropylbutyric acid, ethylisopropylacetic acid) and its derivatives, preparation of (CROSSLEY and LE SUEUR), T., 89; P., 1899, 225.
- its ethyl ester, amide, anilide, and toluide (CROSSLEY and LE SUEUR), T., 93; P., 1899, 225.
- α -bromo-, ethyl ester, action of diethylaniline on (CROSSLEY and LE SUEUR), T., 95; P., 1899, 225.
- Heptioic acid** ($\alpha\beta\beta$ -trimethylbutyric acid) γ -cyano-, ethyl ester (THORPE and YOUNG), T., 939; P., 1900, 115.
- Heptioic acid**, ζ -bromo-, and ζ -iodo- (v. BAEYER and VILLIGER), A., i, 329.
- Heptioic acids**, amino- (WALLACH), A., i, 590.
- β -Heptylamine** and its additive compounds (CLARKE), A., i, 83.
- γ -Heptylamine**, and its salts and compound with phenylthiocarbimide (KIJNER), A., i, 277.
- Heptylene** (γ -ethyl- β -amylene), nitrosate and nitrolanilide of (IPATIEFF), A., i, 3.
- Heptylhydrazine** and its compound with phenylthiocarbimide (KIJNER), A., i, 277.
- β -tert. Heptylhydroxylamine** and its hydrochloride (BEWAD), A., i, 632.
- Heroine**. See Diacetoxymorphine.
- Hessite** from Mexico (HILLEBRAND), A., ii, 22.
- Heteroalbumose**. See Albumose.
- Heulandite** from Japan (JIMBŌ), A., ii, 88.
- Hexahydro-*p*-benzylaminocarboxylic acids**, α - and β -, and their salts (EINHORN and LADISCH), A., i, 227.
- Hexahydrocymene**, 2-chloro- (KLAGES and KRAITH), A., i, 43.
- Hexahydro-*p*-diethylbenzylaminocarboxylic acids**, *cis*- and *trans*-, and their salts (EINHORN and PAPASTAVROS), A., i, 228.
- Hexahydromellitic acid** and the *iso*-acid, attempts to obtain active isomerides of (DE STEFANI), A., i, 349.
- trans*-**Hexahydrophthalic acid**, optically active (WERNER and CONRAD), A., i, 100.
- Hexahydrotoluene**. See Methylcyclohexane.
- Hexahydro-xylic acid**. See Dimethylcyclohexanecarboxylic acid.
- Hexamethylene**. See *cyclo*Hexane.
- Hexamethylenetetramine** (*urotropine*), action of, on the esters of chloro- and bromoacetic acids (LOCQUIN), A., i, 589.
- halogen derivatives of (HOEHNEL), A., i, 279, 478.
- Hexamethyloctohydro-xanthenedione** (VORLÄNDER and KALKOW), A., i, 100.
- Hexanaphthene**. See *cyclo*Hexane.
- Hexane** (*disopropyl*), preparation, vapour pressures, specific volumes, and critical constants of (YOUNG and FORTEY), T., 1126; P., 1900, 165.
- Hexane** ($\beta\beta$ -dimethylbutane), γ -amino- and the action of benzenesulphonic acid on (SOLONINA), A., i, 82.
- cyclo***Hexane** (*hexamethylene*; *hexanaphthene*) (LUNGE and AKUNOFF), A., i, 543.
- purification of (MARKOWNIKOFF), A., i, 18.
- spectrum of (HARTLEY and DOBBIE), T., 846; P., 1900, 129.
- and *mono*- and *di*-chloro-, refraction and magnetic rotation of (YOUNG and FORTEY), T., 372; P., 1900, 44.
- chloro-, action of zinc methyl and of zinc ethyl on (KURSNOFF), A., i, 19.
- Hexanedicarboxylic acids**. See:—
Dimethylethylsuccinic acid.
 β -*iso*Propylglutaric acid.
Trimethylglutaric acid.
- Hexanetricarboxylic acid**. See Dimethylbutanetricarboxylic acid.
- 2-*cyclo*Hexanonecarboxylic acid**, bis-nitroso-, diethyl ester (DIECKMANN), A., i, 297.
- cyclo***Hexanoneisooxime** and its hydrolysis (WALLACH), A., i, 590.
- cyclo***Hexene** (*tetrahydrobenzene*) (LUNGE and AKUNOFF), A., i, 543.
- spectrum of (HARTLEY and DOBBIE), T., 846; P., 1900, 129.

- $\delta\epsilon$ -Hexenic acid** and its salts (WALLACH), A., i, 590.
- Hexenoic acid** (β -isopropylacrylic acid), ethyl ester, condensation of, with ethyl sodiocyanoacetate (HOWLES, THORPE, and UDALL), T., 943; P., 1900, 115.
- Hexenoic acid** (β -methylstyrylacrylic acid) and its salts (POKROVSKY), A., i, 328.
- Hexethylidenetetramine** and its salts (KUDERNATSOH), A., i, 337.
- Hexinene** (trimethylallylene), action of hypochlorous and hypobromous acids on (WITTORF), A., i, 421.
- Hexoic acid** (caproic acid) amino- and ϵ -amino- (WALLACH), A., i, 589. $\alpha\epsilon$ -diamino-. See Lysine.
- isoHexoic acid** (γ -methyladleric acid), barium and calcium salts, water of crystallisation of (ORNSTEIN), A., i, 7.
- Hexon bases**, isolation of, by benzoic chloride (LAWROFF), A., i, 110.
- Hexylamine** (γ -amino- $\beta\beta$ -dimethylbutane) and the action of benzenesulphonic acid on (SOLONINA), A., i, 82.
- β -Hexylamine** (J. BRAUN and STECHELE), A., i, 429.
- β -Hexylene**, nitrosate of (IPATIEFF), A., i, 3.
- Hexylenes** (γ -methyl- β -amylene and δ -methyl- γ -amylene), nitrosates and nitrolanilides of (IPATIEFF), A., i, 3.
- Hippuric acid**, maximum production of, in rabbits (PARKER and LUSK), A., ii, 419.
estimation of (BLUMENTHAL), A., ii, 770.
- Hippuroflavin**, constitution of (RÜGHEIMER), A., i, 609.
homologues of (RÜGHEIMER and FEHLHABER), A., i, 609.
- Histidine** from the proteid of conifer seeds (SCHULZE and WINTERSTEIN), A., ii, 101.
from the proteid of *Lupinus luteus* seedlings (SCHULZE), A., ii, 101.
and its salts, rotatory power of (KOSSEL and KUTSCHER), A., i, 71.
dichloride, crystalline form of (SCHWANTKE), A., i, 608.
- Histon** from leucocytes, decomposition products of (LAWROFF), A., i, 71.
- Hitchcockite** (HARTLEY), A., ii, 600; (PRIOR), A., ii, 602.
- Hollyhock flowers**, composition of (ZAY), A., ii, 563.
- Homocamphanic acid**, formation of (LAPWORTH), T., 1066; P., 1900, 128.
- α -Homocamphoramic acid**, formation of (LAPWORTH), T., 1061; P., 1900, 128.
- Homocamphoric acid** and its bromination (LAPWORTH), T., 1053; P., 1900, 128.
 α -bromo-, and its diethyl ester, action of bases on (LAPWORTH), T., 1066; P., 1900, 129.
- Homocamphoric dianilide** (LAPWORTH), T., 1063.
- Homocamphoronic acid** (LAPWORTH and CHAPMAN), T., 309; P., 1900, 4.
bromination of (LAPWORTH and CHAPMAN), T., 452; P., 1900, 56.
- β -Homochelidonine** (MURRILL and SCHLOTTERBECK), A., i, 686.
- Homocapo-cinchenine** and -cinchenic acid, and their ethyl ethers (KOENIGS), A., i, 247.
- Homodihydroisolaureonamine** and its salts (BLANC), A., i, 240.
- γ -Homodypnopinacone**, and the action of acetic chloride on (DELACRE), A., i, 603.
- Homologues**, regularities in the melting points of (SALZER), A., ii, 260.
- Hops**, distinguishing between quassia and (CHAPMAN), A., ii, 380.
See also Agricultural Chemistry.
- Hornblende** from Portland, Maine (LORD), A., ii, 603.
- Horseflesh**, use of, as food (PFLÜGER), A., ii, 490.
distribution of glycogen in (HAYWOOD), A., ii, 321.
estimation of glycogen from (BREUSTEDT; HAYWOOD), A., ii, 321.
- Horses**. See Agricultural Chemistry.
- Humus**, estimation of, in soil (ASCHMAN and FABER), A., ii, 60; (EMERY), A., ii, 516.
- Hundertkräuter-Likör** (*Centerba*), composition of (PARIS), A., ii, 446.
- Hura crepitans*, milky juice of (SURIE), A., ii, 680.
- Hydrazine**, transformation of hyponitrous acid into (v. BRACKEL), A., ii, 594.
electrolysis of (SZARVASY), T., 605; P., 1900, 3.
action of, on thiocarbamides (BUSCH and BAUER), A., i, 414.
hydrate, action of, on lactones (WEDEL), A., i, 363.
salts, isomerism of, with salts of ammonium, and of hydroxylamine (SABANÉEFF), A., ii, 13.
sulphate, oxidation of, by platinum black (SABANÉEFF), A., ii, 14.
- Hydrazines**, oxidation of (KIJNER), A., i, 334.
as-alkyl aromatic, action of aromatic nitroso-derivatives on (BAMBERGER and STIEGELMANN), A., i, 193.
secondary, compounds of, with aromatic aldehydes (LABHARDT and v. ZEMBRZUSKI), A., i, 125.

- Hydrazinosalicylic acid** (AUDEN), P., 1899, 231.
- Hydrazobenzene**, oxidation of, by atmospheric oxygen (BISTRZYCKI), A., i, 315.
nitro-derivatives of (WERNER and STIASNY), A., i, 194.
- Hydrazoic acid**. See Azoimide.
- 2-Hydrazolepidine** and its salts (MARCKWALD and CHAIN), A., i, 521.
- Hydrazone-compounds** differentiated from azo-compounds by bromine (ARMSTRONG), P., 1899, 243.
- Hydrazones** of dithiocarbonates (BUSCH and LINGENBRINK), A., i, 66, 411.
- 2-Hydrazoquinoline** and its salts (MARCKWALD and MEYER), A., i, 520.
- Hydrindamine chloro- and bromo-camphorsulphonates** and *cis*- π -camphanates, isomeric, (KIPPING), T., 861; P., 1900, 51.
- Hydrindene** (MOSCHNER), A., i, 344.
- Hydrindenesulphonic acid** (MOSCHNER), A., i, 344.
- Hydrobenzoin dinitrate** (v. WALTHER and WETZLICH), A., i, 438.
- Hydrocarbon** (b. p. 172-173°·5), from *d*-carvone (TSCHUGAEFF), A., i, 352.
(m. p. 112-133°), obtained by the oxidation of mesitylene (WEILER), i, 234.
 C_6H_{10} , from dimethylallylcarbinol (LUBARSKY), A., i, 422.
 C_7H_{10} , from teresantallic acid and calcium acetate (MÜLLER), A., i, 678.
 $C_{10}H_{16}$, from oil of savin (FROMM), A., i, 402.
 $C_{15}H_{24}$, and $C_{24}H_{50}$, from poplar oil (FICHTER and KATZ), A., i, 108.
 $C_{18}H_{22}$, from the action of phosphoric oxide on phenylisobutyramide (WALLACH), A., i, 229.
 $C_{18}H_{28}$, from colophony (KRAEMER and SPILKER), A., i, 150.
 $C_{24}H_{38}$, from mineral oil (KLAUDY and FINK), A., i, 284.
- Hydrocarbons** from dypnone (DELACRE) A., i, 603; (GESCHÉ), A., i, 604.
from ethereal oils (SCHIMMEL and Co.), A., i, 184.
from the distillation, under pressure, of lubricating oils (KRAEMER and SPILKER), A., i, 617.
from Californian, Japanese, and Pennsylvanian petroleum (MABERY), A., i, 533.
in Roumanian petroleum (PONI), A., i, 617.
in heavy Texas petroleum (MABERY and BUCK), A., i, 577.
- Hydrocarbons** with high melting points from petroleum resin (ZALOZIECKI and GANS), A., i, 593.
synthesis of (GRIGNARD), A., i, 382.
preparation of, by the hydrogenation of acetylene and ethylene (SABATIER and SENDERENS), A., i, 197, 469, 470, 471, 534.
preparation of, by the oxidation of hydrazines (KIJNER), A., i, 334.
vapour pressures of a series of (WORINGER), A., ii, 709.
relation between the boiling point and melting point in (BAYLEY), A., i, 369.
aromatic, magnetic behaviour of (FREITAG), A., ii, 708.
complex aromatic, action of oxygen on derivatives of the (MANCHOT), A., i, 300.
fatty, preparation of halogen derivatives of (MOUNEYRAT), A., i, 577.
saturated, preparation of (WOLKOFF and MENSCHUTKIN), A., i, 321.
unsaturated, new method of preparation of (TSCHUGAEFF), A., i, 129.
unsaturated, from the action of silver oxide on bromoamines with tertiary amino-groups (KIJNER), A., i, 629.
methods of analysis of (MABERY and CLYMER), A., ii, 439.
- Hydrocarbons**. See also :—
Acetylene.
Allylene.
Amylenes.
Anthracene.
Araliene.
Benzene.
Benzylidenefluorene.
1-Benzylindene.
Bornylene.
*iso*Butane.
Butinene.
Butylbenzenes.
Butylene.
Butyltoluenes (*methylbutylbenzenes*).
Butylxylene.
Cadinene.
Camphane.
Camphene.
Campholene.
Caryophyllene.
Carvomenthene.
Cinnamene.
Crakene.
 ψ -Cumene (1:3:4-triethylbenzene).
Cuprene.
Cymenes.
Dibenzyl.
Diisobutyl (*octane*).
Dicumyldimethylmethane.
Dihydrocamphenes.

Hydrocarbons. See :—

Dihydrocymene.
 $\beta\beta$ -Dimethylbutane (*hexane*).
 1:3-Dimethyl-5-butylbenzene (*butyl-xylene*).
 Dimethylfulvene.
 $\beta\delta$ -Dimethyl- $\beta\delta$ -pentadiene (*heptinene*).
 $\beta\beta$ -Dimethylpentane (*heptane*).
 Dimethylstyrene.
 Dinaphthanthracene.
 Dinaphthyl.
 Diphenyl.
 Di-*m*-phenylenediethene.
 Diphenylmethane
Diisopropyl (*hexane*).
 Di-*m*-tolylmethane.
 Dixylylene.
 Dypnopinalcolene.
 Ethane.
 γ -Ethyl- β -amylene (*heptylene*).
 Ethylbenzene.
 Ethylene.
 Ethyluapthene (*ethylcyclohexane*).
 Fenchene.
 Fluorene.
 Fulvene.
*iso*Geraniolene.
 Heptane.
 Heptinene.
 Heptylene.
 Hexahydrocymene.
 Hexahydrotoluene (*methylcyclohexane*).
 Hexamethylene (*cyclohexane*).
 Hexanaphthene (*cyclohexane*).
 Hexane.
*cyclo*Hexane.
*cyclo*Hexene.
 Hexinene.
 Hexylene.
 Hydrindene.
 Indene.
 Isoprene (*pentinene*).
 Lekene.
 Limonene.
 Menthane.
 Menthene.
 Mesitylene.
 Methane.
 γ -Methyl- β -amylene (*hexylene*).
 δ -Methyl- γ -amylene (*hexylene*).
 β -Methylantracene.
 Methylbutylbenzenes.
 γ -Methyl- β -butylene (*amylene*).
 Methylcyclohexane (*hexahydrotoluene*).
 Methylcyclohexenes.
i-Methylindene.
 Methylnaphthalenes.
 Methylnaphthene (*methylcyclohexane*).
 4-Methylstyrene.
 Naphthalene.
 Naphthanthracene.

Hydrocarbons. See :—

Octane.
*cyclo*Pentadiene.
 3:5:2':4':6'-Pentamethyldiphenylmethane.
 Pentane.
*cyclo*Pentane.
 Pentinene (*isoprene*).
 Petrocenes.
 Phenanthrene.
 Phenylacetylene.
 Phenyldiphenylene-ethylene.
 Phenylethane.
 Phenylethylene.
 Phenylfulvene.
 Phenylmethane.
 Phenylmethylacetylene.
 Phenylmethylfulvene.
 2-Phenyl-naphthalene.
 Phenylstyrene.
 Phenyltolylmethane.
 Phenylxylylethane.
 Picene.
 Pinene.
 Polymethylenes.
 Polyprene.
 Propane.
 Propylbenzenes.
 Propylene.
*iso*Propylstilbene.
 Retene.
 Sabinene.
 Santalenes.
 Santene.
 Sesquiterpenes.
 Stilbene.
 Styrene.
 Terpadiene.
 Terpenes.
 1:2:3:4-Tetraethylbenzene.
 Tetrahydrobenzene.
 Tetrahydrocymene.
 Tetrahydrotoluene (*methylcyclohexane*).
s-Tetramethyldibenzyl.
 Tolane.
 Toluene.
p-Tolylacetylene.
 Tolyethylene.
 1:3:4-Triethylbenzene (ψ -*cumene*).
 Triethylmethane.
 Trimethylallylene (*hexinene*).
 Trimethylene (*cyclopentane*).
 Triphenylbenzene.
 Triphenylmethane.
 Xylenes.
 Xylylene.
 Zingiberine.

Hydrocele fluid, composition of (VERTUN), A., ii, 152.

Hydrochloric acid. See under Chlorine.

- Hydro-*p*-coumaric acid**, identity of, with phloretic acid (BOUGAULT), A., i, 495.
- Hydrocyanic acid**. See under Cyanogen.
- Hydroembelic acid** (HEFFTER and FEUERSTEIN), A., i, 498.
- Hydroferrocyanic acid**, constitution of, decomposition of, in air, action of heat and of ether on (BROWNING), T., 1233; P., 1900, 172.
- decomposition of (ADIE and BROWNING), T., 157; P., 1899, 226.
- and carbonylhydroferrocyanic acid, comparison of heat of fractional neutralisation of (MULLER), A., ii, 130.
- Hydrogallein**, non-existence of (ORNDORFF and BREWER), A., i, 448.
- Hydrogasometer** (BENOIT), A., ii, 435.
- Hydrogen**, existence of free, in the atmosphere (GAUTIER), A., ii, 537, 538.
- spectra of (TROWBRIDGE), A., ii, 701.
- absorption coefficient of, by aqueous solutions of dissociating substances (BRAUN), A., ii, 529.
- density of, dried by liquid air (RAYLEIGH), A., ii, 589.
- liquid, influence of the temperature of, on the germinative power of seeds (THISELTON-DYER), A., ii, 300.
- influence of the temperature of, on Bacteria (MACFADYEN and ROWLAND), A., ii, 610.
- occlusion of, by cobalt and nickel (BAXTER), A., ii, 78.
- deviation from Boyle's law of mixtures of carbon dioxide and (VERSCHAFFELT), A., ii, 192.
- and mixtures of hydrogen and methane and air, limits of combustibility of, passed over red-hot cupric oxide (GAUTIER), A., ii, 469.
- influence of finely divided platinum on the combination of oxygen and (FRENCH), A., ii, 718.
- action of, on antimony sulphide (PELABON), A., ii, 352.
- action of, on mercury selenide, and the inverse action (PELABON), A., ii, 346.
- estimation of, volumetrically (COLSEN), A., ii, 241.
- Hydrogen bromide**. See under Bromine.
- chloride**. See under Chlorine.
- cyanide**. See under Cyanogen.
- fluoride**. See under Fluorine.
- iodide**. See under Iodine.
- nitride**. See Azoinide.
- Hydrogen peroxide** (BRÜHL), A., ii, 535.
- preparation of (DE FORCRAND), A., ii, 129.
- Hydrogen peroxide**, demonstration of the formation of, as a product of direct oxidation (ENGLER), A., i, 400.
- its acyl derivatives and their peroxides, nomenclature of (v. BAEYER and VILLIGER), A., i, 626.
- dielectric constant of (CALVERT), A., ii, 331.
- chemical dynamics of (BREDIG and MÜLLER v. BERNECK), A., ii, 213.
- heat of solution of (DE FORCRAND), A., ii, 526.
- heat of neutralisation of (DE FORCRAND), A., ii, 476.
- equilibrium between persulphuric acid and (LOWRY and WEST), T., 955; P., 1900, 127.
- action of, on barium hydroxide (DE FORCRAND), A., ii, 277.
- action of, on carbohydrates, in presence of ferrous salts (MORRELL and CROFTS), T., 1219; P., 1900, 171.
- action of, on unsaturated hydrocarbons, in presence of ferrous sulphate (CROSS, BEVAN, and HEIBERG), A., i, 534.
- action of, on lime (DE FORCRAND), A., ii, 526.
- action of permanganate on (v. BAEYER and VILLIGER), A., ii, 719.
- action of, on nitrogen iodide (CHATTAWAY and ORTON), A., ii, 722.
- interaction of, with sulphuric acid (LOWRY and WEST), T., 950; P., 1900, 126.
- estimation of (GRÜTZNER), A., ii, 310.
- estimation of, iodometrically (RUPP), A., ii, 572.
- Hydrogen peroxides**, higher (BACH), A., ii, 470.
- Hydrogen tetroxide**, Bach's (ARMSTRONG), P., 1900, 134.
- Hydrogen phosphide** (*phosphine*), preparation of (MATIGNON), A., ii, 482.
- action of, on mercuric chloride (PARTHIEL), A., ii, 543.
- Hydrogen sulphide** and its solution, preparation of (WINKLER), A., ii, 398.
- dissociation constant of (WALKER and CORMACK), T., 14; P., 1899, 208.
- action of, on bismuth, lead or silver peroxides (VANINO), A., ii, 279.
- estimation of (RUSSELL), T., 354; P., 1900, 41.
- Hydrolysis**. See Affinity.
- Hydroxamic acids**, action of amines on (THIELE and PICKARD), A., i, 29.
- Hydroxyacetyl-*p*-acetaminobenzoic acid** and its salts (TROEGER), A., i, 227.

- Hydroxy-acids**, aromatic, and their esters (EINHORN), A., i, 439.
haloid, formation of (MELIKOFF), A., i, 536.
- β -Hydroxy-acids**, dibasic, behaviour of, on boiling with aqueous sodium hydroxide (FICHTER and DREYFUS), A., i, 426.
- 3-Hydroxy-5-alkyl-1:2:4-triazole-1-propionic acids** from acylsemicarbazinopropionic acids, and their acyl derivatives (BAILEY and ACREE), A., i, 528.
- Hydroxyamidosulphates**, decomposition of, by copper sulphate (DIVERS and HAGA), T., 978; P., 1900, 147.
- Hydroxyamino-acids**, aromatic, glyciny derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 493.
- 3-Hydroxy-3- and -4-*i*-amylamino-benzoic acids**, their esters and nitroso-derivatives (EINHORN and HÜTZ), A., i, 442.
- Hydroxyazobenzene** and *p*-aminophenol, action of sulphur on a mixture of (RIS), A., i, 419.
- o*-**Hydroxyazobenzene** (BAMBERGER), A., i, 531.
- Hydroxyazo-compounds**, constitution of (McPHERSON), A., i, 123; (AUWERS and MANN), A., i, 418.
action of sulphur on a mixture of *p*-aminophenol, *m*-amino-*o*-cresol, or *p*-phenylenediamine (RIS), A., i, 419.
- Hydroxyazoxybenzenes**, *o*-, *p*-, and *iso-o*-, and their oxidation (BAMBERGER), A., i, 531.
- p*-**Hydroxybenzaldehyde triacetate** (THIELE and WINTER), A., i, 500.
- m*-**Hydroxybenzamide**, *s*-tribromo-, and its triacetyl derivative (VAN DAM), A., i, 172.
- Hydroxybenzamides**, *o*-, *m*-, and *p*-, action of potassium hypobromite on (VAN DAM), A., i, 171.
- o*-**Hydroxybenzoic acid**. See Salicylic acid.
- m*-**Hydroxybenzoic acid**, 2:4:6-triamino-5-cyano, and its triacetyl derivative, and amide (NIETZKI and PETRI), A., i, 486.
- 2- and 6-*mono*-, and 2:6-*di*-chloro- (MAZZARA and BERTOZZI), A., i, 596.
- Hydroxybenzoic acids**, *m*- and *p*-, glyciny derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 494.
- Hydroxybenzoic acids**, ethyl esters, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 396.
their esters, acyl derivatives, and nitro- and amino-compounds (EINHORN), A., i, 439.
- Hydroxybenzonitrile**, 2:4-dinitro- (BORSCHKE), A., i, 645.
- 1-Hydroxy-1:2:3-benzotriazole** (*benzeno-aziminol*) and the action of acetic chloride on (ZINCKE and SCHWARZ), A., i, 527.
- m*-**Hydroxybenzyl alcohol**, bromide, chloride and iodide, 2:4:6-tribromo-, and the acetyl derivatives of the alcohol and bromide (AUWERS and RICHTER), A., i, 165.
haloids, relation between structure of, and reaction of, with alkalis (AUWERS), A., i, 159.
- p*-**Hydroxybenzyl alcohol**, bromide and iodide, 3:5-*di*bromo-, their acetyl derivatives, and ethers of the alcohol (AUWERS and DAECHE), A., i, 164.
- o*-**Hydroxybenzylacetanilide**, 4:6-*di*-bromo- (AUWERS), A., i, 492.
- m*-**Hydroxy-benzyl- and -benzylidene-aniline** (BAMBERGER and MÜLLER), A., i, 705.
- a*-**Hydroxybenzylideneacetophenone** and its reactions (WISLICENUS), A., i, 37.
- Hydroxybenzylideneaminodi-*p*-tolyl-guanidine** (BUSCH and BAUER), A., i, 415.
- o*-**Hydroxybenzylidenebis-2-methyl-indole** (v. WALTHER and CLEMEN), A., i, 408.
- Hydroxybenzylidene-2-naphthylamine**, 1-bromo- and 1-chloro-*o*- and -*p*-, and their hydrocyanides (MORGAN), T., 1216; P., 1900, 171.
- 2-Hydroxy-1-benzyl- α -naphthindole-quinone** and its carboxylic acid (LIEBERMANN), A., i, 311.
- o*-**Hydroxybenzyl-*p*-tolylnitrosoamine** (BAMBERGER and MÜLLER), A., i, 706.
- a*-**Hydroxybutaldoxime** (FRANKE), A., i, 428.
- Hydroxybutyric acid** in diabetic urine (MAGNUS-LEVY), A., ii, 155.
- Hydroxybutyric acids**, α - and β -, β - and α -bromo- (MELIKOFF), A., i, 536.
- Hydroxycamphenilanic acid** (BRETT and JAGELKI), A., i, 135.
- a*-**Hydroxycamphopyric acid** (GARDNER), P., 1900, 46.
- 4-Hydroxy α carbostyryl** from anthranilic acid (ERDMANN), A., i, 188.
- 4-Hydroxy β carbostyryl** and its 3-carboxylic acid (GABRIEL and COLMAN), A., i, 358, 359.
- Hydroxycapnichenic lactone**, and its ethyl ether (KOENIGS), A., i, 246.
- Hydroxycapnichenine** (KOENIGS), A., i, 246.

- 4-Hydroxy- ψ -cumyl** alcohol, haloids, and ethers, 3:6-dibromo-, acetyl derivatives of (AUWERS, TRAUN, and WELDE), A., i, 165, 168.
- 5-Hydroxy- ψ -cumyl** alcohol and bromide and bromo-derivatives, ethers and acetyl derivatives of (AUWERS), A., i, 161; (AUWERS and MAAS), A., i, 162.
- p-Hydroxy- ψ -cumyl** bromide, phenylurethane of (AUWERS, TRAUN, and WELDE), A., i, 167.
- 5-Hydroxy- ψ -cumylene** dibromide, 3:6-dibromo-, its ethers and acetyl derivatives (AUWERS; AUWERS and EBNER), A., i, 161.
- p-Hydroxy- ψ -cumylene** o-glycol, dibromo-, ethers of (AUWERS and EBNER), A., i, 161.
- 3-Hydroxy-2:6-dicarboxy-1:4** pyronic acid. See Meconic acid.
- 2'-Hydroxy-3:4-diethoxychalkone** and its acetyl derivative (v. HARPE and v. KOSTANECKI), A., i, 237.
- 1-Hydroxy-3:4'-dimethoxy- and -3:4'-diethoxy-flavone** (CZAJKOWSKI, v. KOSTANECKI, and TAMBOR), A., i, 504.
- 6-Hydroxy-1:5-dimethoxyphenanthrene.** See α - ψ -Thebaol.
- 6-Hydroxy-1:5-dimethoxyphenanthrene-10-carboxylic acid.** See α - ψ -Thebaol-carboxylic acid.
- 2-Hydroxy-4:5-dimethylbenzaldehyde** (AUWERS), A., i, 160.
- 8-Hydroxy-5:7-dimethylfluorone** and its acetyl derivative and methyl ether (WEIDEL and WENZEL), A., i, 308.
- α -Hydroxy- α -dimethylheptioic acid** (α -hydroxy- α -methylisohexylacetic acid), and its methyl ester (AUWERS), A., i, 9.
- ϵ -Hydroxy- β -dimethyloctoic acid**, ethyl ester and lactone of (v. BAEYER and VILLIGER), A., i, 329.
- 2-Hydroxydiphenyl**, 5-nitro-, and its benzoyl derivative (BORSCHKE), A., i, 594.
its benzoyl and 5-nitroso-, and 5-amino-derivatives (BORSCHKE), A., i, 24, 594.
- o-Hydroxydiphenylacetic hydrazide** and its benzylidene derivative and compound with o-phthalaldehydic acid (WEDEL), A., i, 363.
- 2-Hydroxy-1:3-diphenylbenzene**, 5-nitroso- and its benzoyl derivative, and 5-amino- (BORSCHKE), A., i, 25, 594.
- p-Hydroxydiphenylcarbamide** and its phenylcarbamate (FISCHER), A., i, 418.
- Hydroxyethanesulphonic acid**, energy of (Cojazzi), A., i, 327.
- 3'-Hydroxy-3-ethoxyflavone** and its acetyl derivative (v. HARPE and v. KOSTANECKI), A., i, 238.
- 1:4-Hydroxyethoxynaphthalene** (RUSSIG), A., i, 602.
- Hydroxyethoxynaphthalene-2-carboxylic acid** and its esters (RUSSIG), A., i, 601.
- 4-Hydroxy-3-ethylisocarbostryl** (GABRIEL and COLMAN), A., i, 358.
- Hydroxyethylideneoxanilide** (v. PECHMANN and ANSEL), A., i, 389.
- 2-Hydroxyethyl-4-methylpyridine** (2:4-lutidylalkine), formation of (ENGELS), A., i, 406.
- 2-Hydroxy-1-ethylnaphthindolequinone** (LIEBERMANN), A., i, 311.
- Hydroxyethylpiperidines** (*piperidine-alkines*), physiological action of (PADERI), A., ii, 742.
- Hydroxyethylsulphonemethylenesulphonic acid** (KÖTZ), A., i, 370.
- 4'-Hydroxyflavone** and its acetyl derivative (GROSSMANN and v. KOSTANECKI), A., i, 669.
- 5-Hydroxyfurfuran-2-carboxylic acid** (CROSS, BEVAN, and BRIGGS), A., i, 682.
- 6-Hydroxy-4-furfuryl- $\Delta^{3,6}$ -dihydropyridone**, 3:5-dicyano- (GUARESCHI), A., i, 53.
- β -Hydroxyglutaric acid**, distillation of (FICHTER and KRAFFT), A., i, 8.
- ζ -Hydroxyheptioic acid**, its ethyl esters and salts (v. BAEYER and VILLIGER), A., i, 329.
- α -Hydroxyhomocamphoric acid**, lactone of. See Homocamphanic acid.
- p-Hydroxyhydratropic acid** (BOUGAULT), A., i, 549.
- 5-Hydroxyhydrindene** (MOSCHNER), A., i, 344.
- Hydroxyl** and halogens, isomorphous replacement of (FELS), A., i, 338.
alcoholic, phenylthiocarbimide as a reagent for the detection of (ORNDORFF and RICHMOND), A., i, 156.
phenolic, influence of (MASSOL), A., i, 600.
- Hydroxyl-function**, thermal value of (DE FORCRAND), A., ii, 526.
- Hydroxylamine**, preparation of free (UHLENHUTH), A., ii, 475.
spectrum of (HARTLEY and DOBBIE), T., 321; P., 1900, 14.
electrolysis of (SZARVASY), T., 608; P., 1900, 3.
oxidation of (v. KNORRE and ARNDT), A., ii, 204.
action of, on bromoamines (KIJNER), A., i, 277, 333.

- Hydroxylamine**, action of, on ethyl 8-cyanophenylpyruvate (ERLENMEYER), A., i, 649.
 action of, on ethyl phenylpropiolate (RUHEMANN and STAPLETON), T., 240; P., 1900, 11.
 reactions of, with hydroxy- and unsaturated compounds (TINGLE), A., i, 544.
 salts, isomerism of, with salts of ammonium and of hydrazine (SABANIEFF), A., ii, 13.
 hydrochloride, gradual decomposition of, when impure (DIVERS and HAGA), T., 978; P., 1900, 147.
 action of, on ketones of the type $\text{CO}(\text{CH}:\text{CHR})_2$, in presence of sodium acetate (MINUNNI and CARTA-SATTA), A., i, 237.
 formic acid derivatives of (SCHROETER and PESCHKES), A., i, 485.
 nickel sulphate compound of (UHLENHUTH), A., ii, 482.
 platinum compounds of (UHLENHUTH), A., ii, 485, 659.
- Hydroxylamines**, aromatic, nature and position of substituents in, in their reaction with nitro-compounds (ANGELI and ANGELICO), A., i, 221.
 action of alkalis on (BAMBERGER and BRADY), A., i, 221.
 oxidation of aqueous solutions of, by atmospheric oxygen (BAMBERGER), A., i, 220.
 β -aromatic, action of diazomethane on (BAMBERGER and TSCHIRNER), A., i, 342.
 action of formaldehyde on (BAMBERGER), A., i, 341.
- 1-Hydroxylaminocamphane** (*β -bornylhydroxylamine*) (FORSTER), T., 255; P., 1900, 14.
- 7(?)-Hydroxylepidone** and its acyl derivatives (V. PECHMANN), A., i, 173; (V. PECHMANN and SCHWARZ), A., i, 174.
- o*-Hydroxymandelic aldehyde** and its osazone and semicarbazone (STOERMER), A., i, 656.
- Hydroxymercuribenzoic acid**, and anhydride, and its salts (PESCI), A., i, 546.
- 4-Hydroxymesityl alcohol**, and methyl ether, 2:6-dibromo-, and their acetyl derivatives (AUWERS, TRAUN, and WELDE), A., i, 166, 169.
 alcohol, 2:6-dibromo- (AUWERS and TRAUN), A., i, 167.
- p*-Hydroxymesitylaniline**, dibromo-, phenylurethanes of, and acetyl derivative (AUWERS, TRAUN, and WELDE), A., i, 166.
- p*-Hydroxymesitylene-aldehyde**, -imino-ether, and -nitrile (THIELE and EICHWEDE), A., i, 501.
- Hydroxymethanesulphonic acid**, energy of (COJAZZI), A., i, 327.
- 4-*p*-Hydroxy-*m*-methoxybenzylidenebis-1-phenyl-3-methyl-5-pyrazolone** (TAMBOR and LICINSKI), A., i, 364.
- 3-Hydroxy-5-methoxy-2-methylphenol** and its hydrochloride and tetracetyl derivative (KONYA), A., i, 545.
- 3-Hydroxy-5-methoxy-2-methyl-*p*-quinone** and its 4-oxime, and -*p*-quinol and its triacetyl derivative (KONYA), A., i, 545.
- 1:4-Hydroxymethoxynaphthalene** (RUSIG), A., i, 602.
- Hydroxymethoxynaphthalene-2-carboxylic acid**, and its esters (RUSSIG), A., i, 601.
- 3-Hydroxy-4-methoxyphenanthrene** (*isomethylmorphol*), synthesis of, and its acetyl derivative and 9-carboxylic acid (PSCHORR and SUMULEANU), A., i, 487.
- 7-Hydroxy-8-methoxy-3-phenyl-2-carbostyryl** (PSCHORR and SUMULEANU), A., i, 488.
- 6-Hydroxy-4-*p*-methoxyphenyl- $\Delta^{3,6}$ -dihydropyridone**, 3:5-dicyano- (GUAR-ESCHI), A., i, 52.
- Hydroxymethyl-*o*-benzoicsulphinide**, synthesis of (MASELLI), A., i, 596.
- 1-Hydroxy-6-methyl-1:2:3-benzotriazole (*tolueneariminol*)** (ZINCKE and SCHWARZ), A., i, 528.
- 4-Hydroxy-3-methylisocarbostyryl** (GABRIEL and COLMAN), A., i, 358.
- 6-Hydroxy-2-methylchromone**, and its acetyl derivative (CRIVELLI and V. KOSTANECKI), A., i, 668.
- 7-Hydroxy-2-methylchromone** (BLOCH and V. KOSTANECKI), A., i, 308.
- 2-Hydroxy-3-methyldiphenyl, 5-nitroso-**, and its benzoyl derivative (BORSCHKE), A., i, 594.
- Hydroxymethylenetropinone** (WILLSTÄTTER and IGLAUER), A., i, 244.
- 2-Hydroxy-4-methyl-3-ethylquinoline** (CAMPS), A., i, 310.
- 8-Hydroxymethylfluorone** (WEIDEL and WENZEL), A., i, 308.
- β -Hydroxy-8-methyl- ϵ -heptenoic acid** and its ethyl ester (V. BRAUN and STECHELE), A., i, 429.
- Hydroxymethylhexoic acid** and its ethyl ester and silver salt (V. BAEYER and VILLIGER), A., i, 329.
- α -Hydroxy- α -methylisohexylacetic acid**.
 See **α -Hydroxy- α -dimethylheptioic acid**.

- 2-Hydroxymethyl-5-phenyl-3-triazol-one-1-propionic acid** (BAILEY and ACREE), A., i, 528.
- 4-Hydroxy-1-methylpyrazole** and its salts (WOLFF), A., i, 692.
- 6-Hydroxy-4-methylpyrimidine**, hydriodide of (GABRIEL and COLMAN), A., i, 55.
- Hydroxymethylquinolines**, 2:4- and 4:2-, synthesis of (CAMPS), A., i, 115.
- 4-Hydroxy-3-methylisoquinoline**, 1-chloro- (GABRIEL and COLMAN), A., i, 359.
- Hydroxymethylquinoxaline** (RUHEMANN and STAPLETON), T., 249; P., 1900, 12.
- 4-Hydroxy-2-methyltrimesic acid** and its esters (ERRERA), A., i, 33.
- 8-Hydroxynaphthalene-4:6-disulphonic acid**, 1-amino- (*aminonaphthol-K-acid*), use of, for the detection of nitrous acid in water (ERDMANN), A., ii, 243; (SPIEGEL), A., ii, 318; (MENNICKE), A., ii, 438, 621.
- Hydroxynaphthalic anhydride**, and derivatives (ANSELM and ZUCKMAYER), A., i, 175.
- Hydroxynaphthaloxime** and its diacetyl derivative (ANSELM and ZUCKMAYER), A., i, 176.
- Hydroxynaphthaquinone** and its acetyl derivative (THIELE and WINTER), A., i, 505.
- 2-Hydroxy- α -naphthaquinone-3-acetic acid** (LIEBERMANN), A., i, 311.
- 2-Hydroxy-1-naphthylacetic acid** and bromo-, and their lactones; and *di*-chloro- (STOERMER), A., i, 656.
- 2-Hydroxyisonicotinic acid**, 6-chloro-, and 6-amino- (SELL and DOOTSON), T., 236; P., 1900, 9.
- Hydroxydinitrobenzeneazodiphenyl-aminesulphonic acid**, sodium salt (GNEHM and WERDENBERG), A., i, 94.
- Hydroxypentanesulphonic acid**, energy of (COJAZZI), A., i, 327.
- 3-Hydroxyphenanthrene** and its acetyl derivative (PSCHORR and SUMULEANU), A., i, 488.
- 4-Hydroxyphenanthrene**, synthesis of, and its methyl ether and acetyl derivative (PSCHORR and JAECKEL), A., i, 488.
- o*-**Hydroxyphenoxycetic acid**. See Catecholacetic acid.
- m*-**Hydroxyphenoxyacetic acid** (*resorcinolacetic acid*), and its silver salt and anilide (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
- p*-**Hydroxyphenoxyacetic acid** (*quinolacetic acid*) and its aniline salt and anilide (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
- o*-**Hydroxyphenylacetic acid**, and its amide, chloride, and lactone; and 5-chloro- and its lactone (STOERMER), A., i, 656.
- 2-Hydroxyphenylacetic acid**, 5-nitro-, and its ethyl ester and lactone (HILL, SOCH, and OENSLAGER), A., i, 538.
- m*-**Hydroxyphenylaminocrotonic acid**, ethyl ester (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- Hydroxyphenyleoumalin** (HESSE), A., i, 35.
- 4-*o*-Hydroxyphenyldihydrodithiazine**, 2:6-dicyano- (HELLSING), A., i, 518.
- 6-Hydroxy-4-phenyl- $\Delta^{3,6}$ -dihydropyridone**, 3:5-dicyano- (*dicyanophenylglutaconimide*), and its salts (GUARESCHI), A., i, 52.
- o*-**Hydroxyphenylmethylurethane** and its benzoyl derivative (RANSOM), A., i, 219.
- 4-Hydroxy-1-phenylpyrazole**, and its 3-carboxylic acid (WOLFF), A., i, 692.
- 2-Hydroxy-4-phenylquinoline** (CAMPS), A., i, 310.
- 5-Hydroxy-1-phenyltriazole** and its 3-benzyl, 3-methyl, and 3-ethyl derivatives (RUPE and LABHARDT), A., i, 258.
- 2-Hydroxy-1-phenyl-4:4:6-trimethyldihydropyrimidine** (TRAUBE and SCHALL), A., i, 118.
- o*-**Hydroxyphenylurethane** from *o*-aminophenyl ethyl carbonate, and its benzoyl derivative (RANSOM), A., i, 218.
- p*-**Hydroxyphthalaldehyde**, tribromo-, its isomeride, and acetyl derivatives (AUWERS and BURROWS), A., i, 99.
- p*-**Hydroxyphthalanil**, dibromo-, preparation of (MEYER), A., i, 447.
- 5-Hydroxyisophthalic acid**, 2:4:6-tri-amino-, and its tetracetyl derivative (NIETZKI and PETRI), A., i, 486.
- 3-Hydroxypiperidone**, preparation of (EMMERLING), A., i, 16.
- Hydroxypivalic acid** (WESSELY), A., i, 428.
- β -**Hydroxypropaldehydediethylacetal** (WOHL and EMMERICH), A., i, 627.
- α -**Hydroxypropionic acid**. See Lactic acid.
- α -**Hydroxyisopropyl- γ -hexenoic acid** (RUPE), A., i, 372.
- Hydroxypropylideneoxanilide** (v. PECHMANN and ANSEL), A., i, 389.
- 4-Hydroxy-2-propylquinoline** (CAMPS), A., i, 310.
- 4-Hydroxypyrazole** and its 3-carboxylic acid (WOLFF), A., i, 691.
- 2-Hydroxypyridine**, 3:4:5:6-tetrachloro- (SELL and DOOTSON), T., 772.

- 6-Hydroxypyrimidine**, 2:4-*di*- and 2:4:5-*tri*-amino- (TRAUBE), A., i, 416.
- Hydroxypyrimidinecarboxylic acid**, amino-, ethyl ester of (RUHEMANN and STAPLETON), T., 808; P., 1900, 122.
- Hydroxypyruvic acid**, constitution of (ABERSON), A., i, 200.
- 8-Hydroxyquinoline**, fate of, in the organism (ROST), A., ii, 154.
- Hydroxyquinolines**, 2- and 4-, syntheses of (CAMPS), A., i, 115, 310.
- 4-Hydroxyisoquinoline**, 1-chloro- (GABRIEL and COLMAN), A., i, 358.
- 8-Hydroxyquinolinecarboxylic acid**, its esters, and nitro- and amino-derivatives (EINHORN), A., i, 441.
- o-Hydroxyquinolineglycuronic acid** (BRAHM), A., ii, 95.
- o-Hydroxyquinolinesulphonic acid**, physiological action of (BRAHM), A., ii, 95.
- See also Quinosol.
- Hydroxystearic acid** and its acetyl derivative (KASANSKY), A., i, 426.
- Hydroxystyrogallol** (2:3:6-*tri*hydroxy-anthracoumarin), preparation and triacetyl derivative of (SLAMA), A., i, 177.
- Hydroxysulphonaphthalic anhydride** (ANSELM and ZUCKMAYER), A., i, 175.
- Hydroxyterephthalic acid**, esterification of (WEGSCHEIDER and BITTNER), A., i, 658.
- β -Hydroxy-s-tetramethylglutaric acid**, action of hydriodic, hydrobromic, and sulphuric acids and nitrogen oxides on; and its isomeride (MICHAILENKO and JAVORSKY), A., i, 586.
- 3-Hydroxy-o-tolualdehyde** and its oxime (AUWERS), A., i, 96; (AUWERS and BURROWS), A., i, 99.
- 5-Hydroxy-o-tolualdehyde**, 3:4:6-*tri*- and *omega*:3:4:6-*penta*-bromo- and its acetyl and benzoyl derivatives and oxime (AUWERS), A., i, 96; (AUWERS and BURROWS), A., i, 98.
- Hydroxytoluic acid** (Me:OH:CO₂H:Br=1:2:3:5) (THIELE and EICHWEDE), A., i, 501.
- 3-Hydroxy-o-toluic acid**, 4:6-*dibromo*- (AUWERS and BURROWS), A., i, 99.
- p-Hydroxytoluic acid** (*p-cresotic acid*), phenyl ester, reactions of, with phenols (COHN), A., i, 548.
- Hydroxytoluic acids**, their esters and nitro- and amino-derivatives (EINHORN), A., i, 439.
- p-Hydroxytoluquinone** and its acetyl derivative (THIELE and WINTER), A., i, 505.
- 2-Hydroxy-1-tolyl-4:4:6-trimethyldihydropyrimidine** (TRAUBE and SCHALL), A., i, 118.
- 1-Hydroxy-1:2:3-triazole-4:5-dicarboxylic acid** (*aziminoethylenedicarboxylic acid*) and its salts (ZINCKE and SCHWARZ), A., i, 528.
- β -Hydroxy- $\alpha\alpha\beta$ -trimethyladipic acid** and its esters (BLAISE), A., i, 329.
- 7(?) -Hydroxy-2:4:4-trimethyl-3:4-dihydroquinoline** (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- γ -Hydroxyvaleric acid**, δ -amino-, barium salt of (EMMERLING), A., i, 16.
- lactam of. See 3-Hydroxypiperidine.
- 4-Hydroxy-m-xylylene glycol**, *tribromo*-, and its methyl ether (AUWERS; AUWERS and HAMPE), A., i, 96.
- Hydroxy-o-xylylene glycols**, *tribromo*-, and their ethers (AUWERS and ERGGELET), A., i, 97.
- Hygic acid** (1-methylpyrrolidine-2-carboxylic acid), synthesis of (WILLSTÄTTER), A., i, 405.
- Hyoscine**, constitution of (HESSE), A., i, 50; (GADAMER), A., i, 356.
- i*-**Hyoscine**. See Atroscine.
- Hyoscyamine**, constitution of (HESSE), A., i, 50; (GADAMER), A., i, 356.
- Hyoscyamus niger*, estimation of the alkaloids of the leaves of (SCHMIDT), A., ii, 379.
- Hyperacids**, thermochemistry of (PISSARJEWSKY), A., ii, 466.
- Hyppal**, estimation of (BOUGAULT), A., i, 311.

I.

- Ice calorimeter**, Bunsen's (MELLOR), A., ii, 334.
- Iceland spar** as a standard in volumetric analysis (MASSON), A., ii, 436; (THIELE and RICHTER), A., ii, 620.
- Iditol**, *d*- and *l*-, benzylidene and methylene derivatives of (DE BRUYN and ALBERDA VAN EKENSTEIN), A., i, 332.
- compounds of, with formaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- l*-Idonic acid**, compound of, with formaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- l*-Idosaccharic acid**, compound of, with benzaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- Imidosulphites** (DIVERS and OGAWA), P., 1900, 113.

- Iminochlorides**, decomposition of (V. PECHMANN and OBERMILLER), A., i, 294.
- Iminodicarboxylic acid**, oxime of (*imino-hydrocyanic acid*) (BAMBERGER and MÜLLER), A., i, 145.
- Imino-ethers**, molecular rearrangement of, by heat (WISLIGENUS and GOLDSCHMIDT), A., i, 435.
action of alkyl iodides on (WHEELER), A., i, 293.
reactions of, with phenylcarbimide, phenylthiocarbimide and acylthiocarbimides (WHEELER and SANDERS), A., i, 563.
- Incineration**, apparatus for (TUCKER), A., ii, 52; (SHUTTLEWORTH and TOLLENS), A., ii, 111; (SHUTTLEWORTH), A., ii, 372.
- Indene**, new syntheses of (KIPPING and HALL), T., 467; P., 1900, 54.
alkylation of (MARCKWALD), A., i, 434.
condensation product of (THIELE), A., i, 347.
- Indeneoxalic acid** and its ethyl ester (WISLIGENUS), A., i, 346; (THIELE), A., i, 347.
- Indene resin** (KRAEMER and SPILKER), A., i, 656.
- Indexing chemical literature**, system of (HILL), A., ii, 648.
- Indiarubber**. See Caoutchouc.
- Indican** (BEYERINCK), A., i, 230, 403; (HAZEWINKEL), A., i, 403; (HOOGEWERFF and TER MEULEN), A., i, 404.
occurrence of, in the chlorophyll grains of the indigo plant (MOLISCH), A., ii, 101.
oxidation product of, in urine (COTTON), A., ii, 293.
detection of, in pathological urine (KLETT), A., ii, 776.
estimation of, in urine (WANG), A., ii, 122; (BOUMA), A., ii, 700.
- Indican enzyme**. See under Enzymes.
- Indicanuria** produced by the administration of oxalates (HARNACK and V. D. LEYEN), A., ii, 422.
- Indicator**, new, for acidimetry (WOLFF), A., ii, 435.
alizarin-green-B as an (FORMÁNEK), A., ii, 435.
ferric isopyrotritarate as an (SIMON), A., i, 625.
p-nitrophenol as an (SPIEGEL), A., ii, 754.
perezone as an (DUYK), A., ii, 308.
- Indicators**, wide occurrence of, in nature (FRAPS), A., ii, 754.
See also Analysis.
- Indigo**, formation of, from *Indigoferæ* and from *Marsdenia tinctoria* (VAN ROMBURGH), A., i, 230.
distinction of, from other blue dyes on fabrics (VAN LEENT), A., ii, 457.
assay of (CLAUSER), A., ii, 180.
- Indigotin**, formation of, from diphenyldiketopiperazine (KUHARA and CHIKASHIGE), A., i, 560.
formation of, from ethyl anthranilate (VORLÄNDER and KOETTNITZ), A., i, 649.
formation of, from woad (BEYERINCK), A., i, 230, 403, 649.
crystalline form of (KLEY), A., i, 346.
fusion of, with potassium hydroxide (HENTSCHEL), A., i, 231.
oxidation of (V. GEORGEVICS and SPRINGER), A., i, 560.
- Indigotintrisulphonic acid**, salts of (HÖNIG), A., i, 231.
- Indigo-white**, crystalline (BINZ and RUNG), A., i, 560.
- Indium**, microchemical detection of (HUYSE), A., ii, 245.
- Indoles**, substituted, action of alkyl iodides on (PLANCHER), A., i, 560.
- Indoline bases**, syntheses of (BRUNNER), A., i, 360.
- 1-Indone**, 3-bromo-, and its oxime (SCHLOSSBERG), A., i, 665.
- Indonecyanoacetamide**, chloro-, and **Indonedicarboxyloglutaconic acid**, bromo-, ethyl ester (LANSER and WIEDERMANN), A., i, 666.
- Indonecyanoacetic acid**, ethyl ester (SCHLOSSBERG), A., i, 666.
- Indonemalonic acid**, chloro-, derivatives of (LANSER and WIEDERMANN), A., i, 666.
- Indoneresorcinol ether**, bromo-, and its acetyl derivative (LANSER and WIEDERMANN), A., i, 667.
- Indoxylanilide** (VORLÄNDER and WEISSBRENNER), A., i, 295.
- Induline dyes**, electrolytic preparation of (SZARVASY), T., 207; P., 1899, 194.
- Infants**, new-born, chemical composition of (CAMERER and SÖLDNER), A., ii, 290.
comparison of the feeding of, on human and cows' milk (MÜLLER), A., ii, 422.
naturally and artificially fed, mineral metabolism in (BLAUBERG), A., ii, 669.
metabolism in (CAMERER and SÖLDNER), A., ii, 222.
excretion of sulphur by (FREUND), A., ii, 226.

- "Influence,"** thermal value of the coefficient of (DE FORCRAND), A., ii, 527, 528.
- Infusion** after severe hæmorrhage (DAWSON), A., ii, 291, 417.
- Infusoria**, action of fluorescent substances on (RAAB), A., ii, 425.
effect of stimuli on (GARREY), A., ii, 158; (JENNINGS), A., ii, 158, 425.
- Inorganic** compounds, constitution of (WERNER, MÜLLER, KLIEN, and BRÄUNLICH), A., i, 86.
substances, phosphorescence of (GOLDSTEIN), A., ii, 702.
- Inositol**, physiological rôle of (POSTERNAK), A., ii, 679.
- Intestinal contents**, chemical reaction of (MOORE and BERGIN), A., ii, 154.
- Intestine**, absorption and excretion of iron by the (ABDERHALDEN), A., ii, 223, 289, 416; (HOFMANN), A., ii, 491.
absorption of sugars in the (HEDON), A., ii, 223.
large, absorption of fats and soaps in the (HAMBURGER), A., ii, 418.
small, absorption in the (COHNHEIM), A., ii, 289.
absorption of saline solutions by the (WALLACE and CUSHNY), A., ii, 31.
excretion in the (CORLETTE), A., ii, 673.
human, relative digestibility of certain fats in the (LÜHRIG), A., ii, 224, 355, 667.
sandy matter from the (THOMSON and FERGUSON), A., ii, 228.
reduction of cholesterol to coprosterol in the (MÜLLER), A., ii, 289.
- Intramolecular** change of bromodiazonium chloride into chlorodiazonium bromide (HANTZSCH and SMYTHE), A., i, 315.
rearrangement (AUWERS), A., i, 492.
- Inulin** from chicory (WOLFF), A., ii, 37.
glycogen-forming properties of (NAKASEKO), A., ii, 670.
- Invertase**, presence of, in some plants of the Gramineæ (O'SULLIVAN), T., 691; P., 1900, 61.
- Iodine** in corals (MENDEL), A., ii, 677.
recovery of, from the residues obtained in the preparation of zinc ethyl (LACHMAN), A., i, 542.
atom, configuration of the (KIPPING and PETERS), P., 1900, 62.
molecular weight of, in various solvents (ODDO and SERRA), A., ii, 73.
action of, on aconitine and caffeine (KIPPENBERGER), A., ii, 777.
- Iodine**, action of, on alkalis (TAYLOR), T., 725; P., 1900, 70.
action of, on gaseous ammonia (HUGOT), A., ii, 274.
behaviour of, with mercuric oxide (ORTON and BLACKMAN), T., 835; P., 1900, 104.
action of persulphates on (MARSHALL), A., ii, 203.
in the blood (GLEY and BOURCET), A., ii, 555.
in the thymus and thyroid (MENDEL), A., ii, 152.
in the thyroid of dogs (GLEY and BOURCET), A., ii, 555.
of the thyroid of infants, variations of the (CHARRIN and BOURCET), A., ii, 419.
influence of, on the circulation (BARBERA), A., ii, 291.
metabolism of (GAUTIER; BOURCET), A., ii, 670.
absorption of, by plants (BOURCET), A., ii, 100.
- Iodine compounds**, effect of very low temperatures on the colour of (KASTLE), A., ii, 526.
- Iodine mono- and tri-chloride**, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 73.
monochloride, reaction of, with alkalis (ORTON and BLACKMAN), T., 830; P., 1900, 103.
- Hydriodic acid** (*hydrogen iodide*), and metallic iodides, action of, on sulphur dioxide (PÉCHARD), A., ii, 398; (BERG), A., ii, 535; (VOLHARD), A., ii, 650.
- Iodides**, absorption of, by the skin (GALLARD), A., ii, 419.
- Iodic acid**, use of, in analysis (JØRGENSEN), A., ii, 620.
detection of, in presence of chloric, perchloric, bromic, and periodic acids, by means of morphine sulphate (REICHARD), A., ii, 685.
- Iodates** and hypiodites, estimation of (ORTON and BLACKMAN), T., 830; P., 1900, 103.
- Iodine compounds, organic**, heats of combustion and formation of (BERTHELOT), A., ii, 387.
- Iodides**, aromatic, oxidation of, by Caro's reagent (BAMBERGER and HILL), A., i, 281.
- Iodine**, detection, estimation, and separation of:—
starch test for (NORRIS and FAY), A., ii, 272.
estimation of (AUZENAT), A., ii, 366.
estimation of, electrometrically (CROTOGINO), A., ii, 642.

Iodine, detection, estimation and separation of:—

estimation of, in presence of bromine and chlorine (V. WESZELSKY), A., ii, 436.

separation of, from bromine and chlorine (CROTOGINO), A., ii, 642.

separation of, from chlorine (VANINO and HAUSER), A., ii, 165.

Iodine reaction, Florence's (STRUVE), A., ii, 328.

Iodoform, electrolytic synthesis of (DONY-HÉNAULT), A., i, 577.

estimation of, volumetrically, in dressings (LEHMANN), A., ii, 372, 767.

Iodoso- and Iodoxy-compounds, preparation of (WILGERODT), A., i, 339; (ORTOLEVA), A., i, 592.

Iodothylin, influence of, on the circulation (BARBÈRA), A., ii, 291.

Ionone, examination of violet preparations for (SCHMIDT), A., ii, 375.

ψ-Ionone from citral (TIEMANN), A., i, 331.

Ions. See Electrochemistry.

Iretol, and its triacetyl derivative (KÖHNER), A., i, 224.

Iridium sesquichloride (LEIDÉ), A., ii, 146.

estimation of, in alloys of the noble metals (MIETZSCHKE), A., ii, 371.

Iron in Disko Island, W. Greenland, possible formation of (WINKLER), A., ii, 598.

atomic weight of (RICHARDS and BAXTER), A., ii, 407.

heat of solution of (CAMPBELL), A., ii, 407.

passivity of (HITTORF), A., ii, 705.

from the standpoint of the phase rule (ROOZEBOOM), A., ii, 728.

behaviour of, with hydrogen (HEYN), A., ii, 728.

function of, in oxidation processes (SARTHOV), A., i, 576.

amount of, in the hæmoglobin of the horse (LAPICQUE and GILARDONI), A., i, 467.

role of, in blood formation (ABDERHALDEN), A., ii, 223, 289, 416; (HOFMANN), A., ii, 491.

accumulation of, in peat (VAN BEMMELEN, HOITSEMA and KLOBBIE), A., ii, 215.

Iron alloys with carbon, Osmond and Roberts-Austen's theory of (HEYN), A., ii, 657.

with nickel, allotropic transformations of (DUMAS), A., ii, 408.

estimation of phosphorus in (IBBOTSON and BREARLEY), A., ii, 757.

Iron salts, hydrolysis of (RICHARDS), A., ii, 472.

solubility of, in sucrose solutions (STOLLE), A., i, 333.

action of sodium thiosulphate on (FAKTOR), A., ii, 692.

Iron carbonyls, and their importance in the industrial application of water-gas (VAN BREUKLEVEEN and TER HORST), A., ii, 348.

pyrophosphate, soluble, test for the purity of (RIDENOUR), A., ii, 444.

phosphide, preparation of (MARONEAU), A., ii, 281.

tungsten phosphide (DEFACQZ), A., ii, 350.

selenides (FONZES-DIACON), A., ii, 546.

silicide, Fe_2Si , and its presence in ferro-silicons (LEBEAU), A., ii, 729.

Ferric chloride, compound of, with nitrosyl chloride (VAN HETTEREN), A., ii, 137.

action of organic solvents on solutions of (OECHSNER DE CONINCK), A., i, 535.

fluoride, double salts of, with ferrous, cobalt, nickel, or zinc fluorides (WEINLAND and KÖPPEN), A., ii, 143.

oxide, ignited, rapid solution of, in hydrochloric acid (BORNTRÄGER), A., ii, 171.

solution obtained by dialysis (WOBBE), A., ii, 281.

estimation of, in natural phosphates (VEITCH), A., ii, 577.

sulphate, basic, $\text{Fe}_2\text{S}_2\text{O}_9$ (SCHARIZER), A., ii, 349.

Ferrous fluoride, double salts of, with aluminium or ferric fluoride (WEINLAND and KÖPPEN), A., ii, 143.

iodide, and its compound with ammonia (JACKSON and DERBY), A., ii, 596.

syrup of, volumetric valuation of (RUPF), A., ii, 580.

cadmium sulphates, solubility of (STORTENBEKER), A., ii, 530.

Iron organic compounds:—

Iron compounds, *pentacyano*-, preparation and nomenclature of (HOFMANN), A., i, 591.

Ferrous cyanide, constitution of (BROWNING), T., 1236; P., 1900, 172.

Iron ores, estimation of titanium in (BRAKES), A., ii, 248.

magnetic, from Eastern Ontario (POPE), A., ii, 409.

titaniferous, analysis of (BASKERVILLE), A., ii, 629.

Iron ores:—

Steel, tempered and untempered, constitution of; influence of tempering on the state of combination of elements other than carbon (CARNOT and GOUTAL), A., ii, 545.

heat of solution of (CAMPBELL), A., ii, 407.

from the standpoint of the phase rule (ROOZEBOOM), A., ii, 728.

Steel alloys, estimation of phosphorus in (IBBOTSON and BREARLEY), A., ii, 757.

Steel, estimation of carbon in (SARGENT; AUCHY; BLOUNT), A., ii, 574.

estimation of carbon in, treatment of copper potassium chloride for the (SARGENT), A., ii, 440.

estimation of chromium in (DÖHLER; MAHON), A., ii, 110.

estimation of manganese in (NAMIAS), A., ii, 50; (JERVIS), A., ii, 444.

estimation of manganese in, volumetrically (MIGNOT), A., ii, 690.

estimation of molybdenum in (IBBOTSON and BREARLEY), A., ii, 766.

estimation of phosphorus in (IBBOTSON and BREARLEY), A., ii, 757.

containing arsenic, estimation of phosphorus in (CAMP), A., ii, 757.

Iron (in general), estimation and separation of:—

relative values of the Mitscherlich and hydrofluoric acid methods for the estimation of ferrous (HILLEBRAND and STOKES), A., ii, 763.

apparatus for the estimation of (SHIMER), A., ii, 50.

estimation of carbon in (SARGENT; AUCHY; BLOUNT), A., ii, 574.

estimation of graphitic carbon in (FORD and BREGOWSKY), A., ii, 168.

estimation of carbon in, treatment of copper potassium chloride for the (SARGENT), A., ii, 440.

estimation of carbon, copper and manganese in (HERTING), A., ii, 245.

estimation of chromium in (DÖHLER), A., ii, 110.

estimation of manganese in (NAMIAS), A., ii, 50; (HERTING), A., ii, 245.

estimation of manganese in, volumetrically (MIGNOT), A., ii, 690.

estimation of molybdenum in (DÖHLER), A., ii, 691.

containing arsenic, estimation of phosphorus in (CAMP), A., ii, 757.

Iron (in general), estimation and separation of:—

estimation of sulphur in (MOORE), A., ii, 106; (RIEMER), A., ii, 309; (BLOUNT), A., ii, 574.

estimation of, in tap cinder (BLUM), A., ii, 512.

separation of, from chromium, zirconium, and beryllium (HAVENS and WAY), A., ii, 50.

Iron group, molecular susceptibility of salts of the (DU BOIS and LIEBKNECHT), A., ii, 128; (LIEBKNECHT and WILLS), A., ii, 187.

Isatan (BEYERINCK), A., i, 649.

Isatase (BEYERINCK), A., i, 649.

Isatin, action of *o*-phenylenediamine acetate on (MARCHELEWSKI), A., i, 100.

Isatis tinctoria. See Woad.

Isatoic anhydride, formation of (BREDT and HOF), A., i, 229.

Isomorphism in Mendeléeff's system (BEHRENS), A., ii, 136.

of salts of ammonium, hydroxylamine, and hydrazine (SABANÉEFF), A., ii, 13.

of red and yellow mercuric oxides (COHEN), A., ii, 184, 381; (OSTWALD), A., ii, 712.

in the aromatic series (OECHSNER DE CONINCK), A., i, 592.

of the formylphenylacetic esters (WISLICENUS), A., i, 597.

in the menthol series (KONDAKOFF and LUTSCHININ), A., i, 104, 604.

space, of the ethers of toluquinone-oxime (MORGAN), A., i, 103.

Isomorphous mixtures and solid solutions (BRUNI), A., ii, 196.

physical equilibrium in (BRUNI and GORNI), A., ii, 197.

of saturated and non-saturated open-chain compounds (BRUNI and GORNI), A., ii, 714.

Isoprene. See Pentinene.

Isotherms and Isochores for systems involving dissociation, deduction of reaction (IKEDA), A., ii, 386.

Ivaarite from Finland (HACKMAN), A., ii, 664.

J.

Jaborandileaves, alkaloids of (JOWETT), T., 473; P., 1900, 49.

Jaborine (JOWETT), T., 473; P., 1900, 50.

Jadeite from Piedmont (PIOLTI), A., ii, 487.

Japaconine, preparation, composition, properties and salts of (DUNSTAN and READ), T., 58; P., 1899, 207.

- Japaconitine**, extraction, composition, properties, hydrolysis, salts, and physiological action of (DUNSTAN and READ), T., 47; P., 1899, 206.
- Japanic acid** (GEITEL and VAN DER WANT), A., i, 271.
- Japbenzaconine**, preparation, properties, hydrolysis and salts of (DUNSTAN and READ), T., 55; P., 1899, 207.
- Jasmine**, oil of (HESSE), A., i, 48; (WALBAUM), A., i, 509; (JEAN-CARD and SATIE), A., i, 510.
blossom, oil of (HESSE), A., i, 454.
- Jasmone**, and its oxime and semicarbazone (HESSE), A., i, 48.
- Johnstonotite** from Tasmania (MACLEOD and WHITE), A., ii, 663.
- Jordanite** from the Binnenthal (SOLLY and JACKSON), A., ii, 599.
- Juniper**, empyreumatic oil of (CATHELINEAU and HAUSER), A., i, 510.
- K.**
- Kaempferia Galanga**, oil of (VAN ROMBURGH), A., i, 677.
- Kaolinite** from Moravia (KOVÁK), A., ii, 148, 149.
from Westana, Sweden (WEIBULL), A., ii, 286.
- Kelyphite** from Steinegg, Austria (MRHA), A., ii, 218.
- Ketochlorides** of aziminobenzene (ZINCKE, STOFFEL, and PETERMANN), A., i, 524.
- Ketooapo-cinchénine** and -homocinchénine, ethyl ethers of (KOENIGS), A., i, 246.
- 4-Ketodihydroquinazolines**, synthesis of (BOGERT and GOTTHELF), A., i, 412, 608.
- 2-Ketohexamethylenecarboxylic acid**.
See 2-cyclohexanonecarboxylic acid.
- Ketohydrindene**, diiodo- (LIEBERMANN and FLATOW), A., i, 667.
- Ketohydroxytriphenyltetrahydrobenzene**, oxime of, compound of, with certain solvents (PETRENKO-KRITSCHENKO and KASANEZKY), A., i, 350.
- Ketolactone**, $C_{10}H_{16}O_3$, from isothujone (SEMMLER), A., i, 240.
- α -Ketonaphthalene**, β -tetrahaloro-, phototrophy of (MARCKWALD), A., ii, 2.
- Ketone**, $C_{10}H_{16}O$, from isofenchyl alcohol (BERTRAM and HELLE), A., i, 399.
 $C_{21}H_{36}O$, from heating japanic acid (GEITEL and VAN DER WANT), A., i, 272.
- Ketone**, $C_{22}H_{30}O_2$, from heating the product of dibenzyl ketone and benzaldehyde (GOLDSCHMIEDT and KNÖPFER), A., i, 36.
 $COEt \cdot C_6H_3(OMe)_2OPr$, from isoeugenol dibromide and sodium methoxide (POND, MAXWELL, and NORMAN), A., i, 102.
 $COEt \cdot C_6H(OMe)_2 : O : CH_2$, from isopiole *d*/bromide and sodium methoxide; and its oxime (POND, MAXWELL, and NORMAN), A., i, 102.
- Ketones**, formation of, from acid chlorides by means of aluminium chloride (PERRIER), A., i, 331; (BORSEKEN), A., i, 349.
from the dibromides of propenyl compounds, and of unsaturated ketones (POND, MAXWELL, and NORMAN), A., i, 102.
new synthesis of (WEDEKIND), A., i, 665.
electro-synthesis of (HOFER), A., i, 275.
condensation products of, with *o*-aldehydic acids, properties of (FULDA), A., i, 36.
alkylation of (NEF), A., i, 349.
reactions of, with alkyl nitrites, in presence of excess of alcoholic hydrogen chloride (KISSEL), A., i, 620.
action of Caro's reagent on (v. BAeyer and VILLIGER), A., i, 133, 206, 328, 627.
action of ethyl cyanoacetate and ammonia on (GUARESCHI and GRANDE), A., i, 111; (MINOZZI), A., i, 407.
of the type $CO(CH:CHR)_2$, action of hydroxylamine hydrochloride on, in presence of sodium acetate (MINUNNI and CARTA-SATTA), A., i, 237.
condensation of, with nitromalonaldehyde (HILL, SOCH, and OENSLAGER), A., i, 538.
conversion of, into α -diketones (PONZIO), A., i, 588.
cyclic, ring disruption among (WALLACH), A., i, 44, 589.
condensation of, with ethyl succinate (STROBBE and FISCHER), A., i, 179.
isomeric, separation of (MICHAEL), A., i, 321.
amino-, formation of alkali salts of (WILLSTÄTTER and BODR), A., i, 245.
aromatic, new method of preparing (KUNCKELL), A., i, 664.
halogenised (KUNCKELL), A., i, 663.

Ketones, *dichloro-*, formation of, by the action of hypochlorous and hypobromous acids on acetylene and its mono-substituted derivatives (WITTORF), A., i, 421.

Ketones and Quinones. See also :—

Acetone.
Acetonechloroform.
Acetonylacetone.
Acetophenone.
Acetophenoneazobilirubin.
Acetophenonephenylacetylene.
Acetoxymesityl oxide.
Acetylacetanilide.
Acetylaceto-*ψ*-cumide.
Acetylacetone.
Acetylacetotoluidides.
Acetyl-*as*-aceto-*m*-xylidide.
Acetylaminacetophenone.
Acetylamino-4-anilino-*β*-naphthaquinone.
4-*p*-Acetylaminobenzeneazo-1-phenyl-3-methylpyrazolone.
p-Acetylaminobenzoylcarbinol.
7-Acetylaminobenzoyl-*β*-naphthaquinone.
Acetylcarbinol.
1-Acetylcoumarone.
Acetyl-*ψ*-cumidine.
Acetylmethylcyclohexanone.
Acetylphenylacetylene.
Acetylpyrrolidone.
Acetylitoluidines.
Acetyl-*as*-*m*-xylidine.
Allylacetone.
*iso*Amyloxyacetone.
Anhydroacetylacetoneaminocamphor.
Anhydrobenzoylacetoneaminocamphor.
Anhydroethylacetoacetateamino-camphor.
Anhydrotetradiketohydrindene.
Anilindiphenylbenzoquinone.
3-Anilino-1-indone.
Anisoin.
Anthragallol.
Anthraphenones.
Antipyrene.
Apigenin.
Benzaldehydepyrrolylhydrazine.
Benzeneazobenzoylacetone.
3-Benzeneazo-6-hydroxybenzylideneacetophenone.
Benzil.
Benzoin.
Benzophenone.
Benzophenone diethyl, diphenyl, and ditolyl diketones.
Benzophenonediphenyldiketonedicarboxylic acid.
Benzophenonephenylacetylene.
Benzo-*γ*-pyrone.
Benzoylacetone.
Benzoylanisoylmethane.

Ketones and Quinones. See :—

Benzoylbenzhydrol.
Benzoylcarbinol.
Benzoylphenylacetylene.
α-Benzoylphenylhydrazinotrichloroquinone.
Benzoyl-2:4:6:4'-tetramethoxyacetophenone.
Benzylaminochloroindone.
3-Benzylamino-1-indone.
Benzylidenebisacetylacetones.
Benzylidenebisgallacetophenone.
Benzylidenebisresacetophenone.
Benzyl-*α*-naphthaquinone.
p-Bis-1-phenyl-3-methylpyrazolone-azobenzene.
Bispulegone.
4-*tert*.Butylcoumarone.
*iso*Butylideneacetone.
Butylxyl methyl ketone.
*iso*Butylacetone.
p-n-Butyrylacetanilide.
p-n-Butyrylaniline.
*iso*Camphenone.
Camphenylene.
Camphor.
Camphorone.
Carbindigo.
Carvenone.
Carvone.
Carvotanacetone.
Chromone (*pheno-γ-pyrone*).
Chrysarobin.
Chrysoketone.
Chrysophanic acid.
Chrysophanohydroanthrone.
Chrysquinone.
Coumarone.
Cotoin.
Decahydroacridinedione.
Deoxybenzoin.
Desylacetomesitone.
Desylacetonephthones.
Diacetoneamine.
Diacetoneguanidine.
Diacetoxystilbene.
Diacetylacetone.
Dianilinophenylbenzoquinone.
Dibenzoxy stilbene.
Dibenzoylmethane.
Dibenzyl ketone.
Dibenzylacetophenone.
Dicotoin.
Dicoumaryl ketone.
Diethoxyacetylacetophenones.
Diethoxybenzoylacetophenones.
3:7-Diethoxychromone.
Diethoxyflavanones.
Diethoxyflavones.
Diethylaminoanthraquinone.
Dihydrocarvone.
Dihydroencarvone.

Ketones and Quinones. See :—

Dihydroxyflavanones.
 Dihydroxyflavones.
 Dihydroxy-*m*-xyloquinone.
 Diindoneacetone.
 Diindoneacetophenone.
 Diindonebenzoylacetone.
 Diketobutyrolactone.
 1:3-Diketohydrindene.
 2:5-Diketotetrahydrothiazole.
 2:3-Dimethoxyphenanthraquinone.
 Dimethylaminoanthraquinone.
 6-Dimethylaminoc-3-methylcoumarone.
o-Dimethylanthraquinone.
 Dimethyldiacetylacetone.
 Dimethylcoumarones.
 Dimethylphenomorpholone.
 Dimethylpyrone.
 Diphenylbenzoquinone.
 Diphenyldiketopiperazine.
 Diphenylmethane diphenyl and ditolyl diketones.
 1:2-Diphenyl-4-*l* henacetylpyrrolone.
 Diphenyloctohydroxanthenedione.
 Diphenylpyrimidone.
 Diphenylquinone.
 1:2-Diphenyltetrahydro- β -naphthenone.
 Diisopropyl diketone.
 Dypnone.
 4'-Ethoxyflavone.
 7-Ethoxy-2-methylchromone.
 2-Ethoxy-3:4'-methylenedioxy-flavone and -flavone.
 Ethoxyphenylthiodiazolone.
 3-Ethoxy-1-phenyl-5-triazolone.
 Ethylaminoindone.
 Ethylchlorophenomorpholone.
 Ethylcoumarones.
 Ethyldiacetylacetone.
 2-Ethyl-4-ketodihydroquinazoline.
 Ethylpyrrolidone.
 1-Ethyl-2-quinolone.
 Fenchocamphorone.
 Fenchone.
 Flavone.
 Genistein.
 Hexamethyloctohydroxanthenedione.
 α -Hydroxybenzylideneacetophenone.
 2'-Hydroxy-3:4'-diethoxychalkone.
 1-Hydroxy-3:4'-diethoxyflavone.
 1-Hydroxy-3:4'-dimethoxyflavone.
 8-Hydroxy-5:7-dimethylfluorone.
 3'-Hydroxy-3-ethoxyflavone.
 4'-Hydroxyflavone.
 6-Hydroxy-4-furfuryl-4-*p*-methoxyphenyl- and -4-phenyl- $\Delta^{3,6}$ -dihydropyridone.
 Hydroxylepidone.
 4-*p*-Hydroxy-*m*-methoxybenzylidenebis-1-phenyl-3-methyl-5-pyrazolone.

Ketones and Quinones. See :—

3-Hydroxy-5-methoxy-2-methyl-*p*-quinone.
 Hydroxymethylchromones.
 Hydroxymethylenetropinone.
 8-Hydroxymethylfluorone.
 Hydroxynaphthathquinone.
 3-Hydroxypiperidone.
 Hydroxystyrogallol.
p-Hydroxytoluquinone.
 Indone.
 Ionone.
 ψ -Ionone.
 Jasmone.
 Ketoapocinchene.
 Ketodihydroquinazolines.
 Ketoapohomocinchene.
 Ketohydrindene.
 α -Ketonaphthalene.
 Luteolin.
 2:6-Lutidyl acetonyl sulphide.
 Meconindimethyl ketone.
 Menthone.
 α -Mesityne.
 Mesityl oxide.
 2-Methoxyacetylacetophenone.
 4-Methoxyanthraquinone.
 Methoxycoumarones.
 3'-Methoxy-2:4'-diethoxy-flavanone and -flavone.
 Methoxy mesityl oxide.
 Methoxyphenanthraquinones.
 Methylacetylcarbinol.
 Methylalizarin.
 Methylaminomethyl-2-piperidone.
 β -Methylanthraquinone.
 Methyl *isobutenyl* ketone.
 2-Methylchromone.
 Methylcoumarones.
 Methyl ethyl desylsulphine salts.
 Methyl ethyl ketone.
 Methyl ethyl phenacylsulphine salts.
 Methyl furfuryl ketone.
 Methyl-2-heptene-4-one-6.
 Methylcyclohexamethylene ketone.
 Methylcyclohexanone.
 Methylhystazarin.
 2-Methyl-4-ketodihydroquinazoline.
 Methylcyclopentanone.
 Methylphenomorpholone.
 5-Methylphenoxazine-2:3-quinone.
 Methylisopropylcoumarones.
 Methyl propyl ketone.
 Methylquinizarin.
 Naphtha- β -ketopentamethyleneazine.
 Naphthanthraquinone.
 Naphthapurpurin.
 Naphthaquinoneacetylacetones.
 Naphthaquinonebenzoylacetones.
 Naphthaquinonebis-1-phenyl-3-methylpyrazolone.
 β -Naphthaquinone-4-deoxybenzoin.

Ketones and Quinones. See:—

α -Naphthaquinone-3-dihydro-resorcinol.
 Naphthaquinones.
 Naphthazarin.
 β -Naphthoxyacetone.
 Nopinone.
 Octohydroacridinedione.
 Octohydroxanthenedione.
 α -Oximino-ketones.
 Oxymethylenecamphor.
 $\beta\theta$ Oxy- β -methyl- η -octene- ζ -one.
 Pentahydroxynaphthaquinone.
 Pentamethyloctohydroxanthenedione.
 Phenanthraquinone.
 Phenoketopentamethyleneazine.
 Pheno- γ -pyrone.
 Phenoxyacetophenone.
 Phenylaminopyridothiazinone.
 1-Phenyl-3-benzoyloxydiazolone.
 Phenyldecahydroacridinedione.
 Phenyl Diazopyridothiazinone.
 1-Phenyl-2:5-diketotetrahydrothiazole.
 1-Phenyl-3:3-dimethyl-2-indolinone.
 1-Phenyldimethylpyrazolone.
 Phenylene ditolyl diketone.
 1-Phenyl-4-*o*-ethoxybenzylidene-3-methyl-5-pyrazolone.
 1-Phenyl-3-ethyl-5-ketotriazole-4-carbamide.
 1-Phenyl-3-furfurylpyrazolone.
 1-Phenyl-4-*p*-hydroxy-4-methoxybenzylidene-3-methyl-5-pyrazolone.
 2-Phenylketonaphthatriazine.
 1-Phenyl-4-ketopyrazoline.
 1-Phenyl-4-ketopyrazolone.
 1-Phenyl-5-ketotriazole-4-carbamide.
 Phenylketotriazoles.
 Phenyl meconinmethyl ketone.
 5:3-Phenylmethyl- Δ^2 -cyclohexenone.
 1-Phenyl-3-methyl-5-ketotriazole-4-carbamide.
 Phenylmethylpyrazolones.
 3-(or 5)-Phenyl-4-*p*-nitrobenzeneazo-5-(or 3)-methylisooxazolone and -pyrazolone.
 Phenylloctohydroxanthenedione.
 5-Phenylisooxazolone.
 Phenyl phthalidemethyl ketone.
 2-Phenylquinone.
 Phenyltetramethyloctohydroxanthenedione.
 Phorone.
 Propionylaceto- ψ -cumidide.
 Propionylaceto-*o*-toluidides.
 Propionylacetoxyllide.
 Phthalidedimethyl ketone.
 Phthalylimino-ketones.
 Pinacolin.
 Pinenone.
 Piperidylacetophenones.

Ketones and Quinones. See:—

Piperonylacetone.
 Piperonylideneecamphor.
p-Propionylacetanilide.
p-Propionylaniline.
 Propionylcarbinol.
p-Propionylphenylcarbamide.
 Propyl butyl ketones.
 4-*iso*Propylcoumarone.
*iso*Propylpyrrolidone.
 Pulegones.
 Pyramidone.
 Pyridineacetophenone.
 Pyrrolidone.
 Pyrrolyazoimide.
 Pyrrolylhydrazide.
 2 Quinolones.
 Quinone.
 Rhabarberohydroanthrone.
 Rhabarberone.
 Sabinene ketone.
 Santalone.
 Succitoly ketone.
 Tanacetone.
 Terpenone.
 Tetrahydropyrone.
 Tetrahydroxyanthraquinone.
 2:4:6:4'-Tetramethoxybenzoylacetophenone.
 Tetramethylaminobenzophenone.
s-Tetramethylbenzoin.
 1:3:4:6-Tetramethylcoumarone.
 Tetramethyldecahydroacridinedione.
 Tetramethyldihydropyridone.
 Tetramethylethylloctohydroxanthenedione.
 Tetramethyloctohydroxanthenedione.
 Tetramethylpyridone.
 Tetramethylpyrone.
 Tetraphenyl- $\beta\beta$ -diketopiperazine.
 Tetraphenylpyrrolone.
 Thujamenthone.
*iso*Thujone.
 Toluquinone.
 2-Tolylketo-7-methylphenotriazine.
 Tolyloxyacetones.
 Tolylypyridazinone.
p-Tolylypyrrolidone.
 Triacetonedibenzamidine.
 1:3:4'-Triacetoxylavone (*triacetylapi-genin*).
 Trihydroxyanthracoumarin.
 1:3:4'-Trihydroxyflavone (*apigenin*).
 2:3:4'-Trihydroxyflavone.
 Trihydroxynaphthaquinones.
 1:3:4-Trimethoxyflavone.
 Trimethylcoumarones.
 Trimethyldihydropyridone.
 Trimethylcyclopentanone.
 4:5:6-Trimethylpyridone.
 Trimethylpyrone.
 Triphenyldecahydroacridinedione.

Ketones and Quinones. See:—

Triphenyloctohydroxanthenedione.

Trisdihydroxybenzoylenebenzene.

Trisdiketohydrindene.

Tropinone.

Verbenone.

Xanthone.

Xylenoxyacetone.

Ketonic acid, $C_{10}H_{18}O_3$, from $\beta\zeta$ -dimethyloctane- ϵ -oic acid (v. BAEYER), A., i, 132.**Ketonic acids** from disulphones (POSNER and FAHRENHORST), A., i, 16.

condensation of, with nitromalonaldehyde (HILL, SOCH, and OENSLAGER), A., i, 538.

mercaptols and disulphones of (POSNER), A., i, 5.

mercury salts of (LEY), A., i, 382.

 γ -**Ketonic acids**, action of phenylcarbimide and aniline on (KLOBB), A., i, 405.**2-Ketopentamethylenecarboxylic acid.** See 2-cyclopentanonecarboxylic acid.**2-Ketophenemorpholine-4-, -5- and -6-carboxylic acids**, and their methyl esters and amides (EINHORN and OPPENHEIMER), A., i, 494.**Ketoximes** (PETRENKO-KRITSCHENKO and KASANEZKY), A., i, 350.

electrolytic oxidation of (SCHMIDT), A., i, 332.

Kidneys, action of certain poisons on the (LINDEMANN), A., ii, 492.**Kieselguhr** from Co. Antrim (POLLOK), A., ii, 287.**Kossin** and the other constituents of *Flores Kosso* (KONDAKOFF; KONDAKOFF and SCHATZ), A., ii, 38.**Kohl-rabi.** See Agricultural Chemistry.**Krypton** (LADENBURG and KRÜGEL), A., ii, 540, 723.

L.

Labdanum resin, examination of (DIETERICH), A., ii, 118.**Labradorite** from Russia (TARASSENKO), A., ii, 26.**Lactase** of the pancreas (WEINLAND), A., ii, 93.**Lactation**, influence of phloridzin diabetes on (LUSK), A., ii, 558.**Lactic acid** (*i-ethylidenelactic acid*, α -hydroxypropionic acid), occurrence of, in the organism, in arsenical poisoning (MORISHIMA), A., ii, 296.
oxidation of, in presence of ferrous salts (FENTON and JONES), T., 71; P., 1899, 224.**Lactic acid**, reduction of metallic nitrates by (VANINO and HAUSER), A., ii, 722.

salts of, and lactide, thermochemical data for (BERTHELOT and DELÉPINE), A., ii, 130.

estimation of, in the commercial article (JEAN), A., ii, 767.

separation of butyric and valeric acids and (SCHNEIDER), A., ii, 177.

Lactic acid bacillus. See Bacillus.**Lactone**, $C_{10}H_{16}O_3$, from the bromination of homocamphoric acid (LAPWORTH), T., 1063; P., 1900, 128.

from ethyl fumarate and benzyl cyanide (HENZE), A., i, 347.

(b. p. 234-236°), from heating β -hydroxy- $\alpha\alpha\beta$ -trimethyladipic acid (BLAISE), A., i, 330.**Lactones**, action of ammonia on (MEYER), A., i, 9.

action of hydrazine hydrate on (WEDEL), A., i, 363.

Lactones. See also:— ψ -Campholactone.

Campholide.

Camphonolactone.

Catechobis- α -oxy-butyric, -propionic, and -isovaleric acids, lactones of.

Coumarin.

Dehydracetic acid.

7-Diethylamino-4-methylcoumarin.

Dihydroxybutanetetra-carboxylic acid, lactone of.

Diketobutyrolactone.

7-Dimethylamino-4-methylcoumarin.

7-Dimethylamino-4-methyl-3-ethylcoumarin.

 $\beta\zeta$ -Dimethyloctane- ϵ -olide.Diphenylacetic acid, γ -lactone of.Homocamphanic acid (lactone of α -hydroxyhomocamphoric acid).

Hydroxyapocinchonic lactone.

2-Hydroxy- $\beta\zeta$ -dimethyloctoic acid, lactone of.

2-Hydroxy-1-naphthylacetic acid, lactone of.

Hydroxyphenylacetic acid, lactone of. Ketolactone, $C_{10}H_{16}O_3$.

7-Methylamino-4-methylcoumarin.

4-Methylcoumarin.

Methylenemannonic lactones.

*iso*Octolactone. β -Oximinobutyrolactone.

4-Phenylcoumarin.

Pinodihydrocampholenolactone.

 β -*iso*Propylheptane- ϵ -oic acid, lactone of.

Strophanthidolactone.

Tetramethyl-6:7-dihydroquino-coumarin.

Trihydroxybutyric acid, lactone of.

- Lactones.** See :—
 Triphenylcrotonolactone.
 Xylonic lactone.
- Lactopheninsulphonic acid** (COHN), A., ii, 29.
- Lactose** (*milk sugar*), formation of, in the organism (MOORE and PARKER), A., ii, 671
 degradation of (RUFF and OLLEN-DORFF), A., i, 476.
 detection of sucrose in (LANDIN), A., ii, 514.
 estimation of, in milk (GALLIEN), A., ii, 324.
- Lævulic acid** (*β -acetylpropionic acid*), mercury derivatives of (LEY), A., i, 382.
p-nitrophenylhydrazone of (FEIST), A., i, 569.
- Lævulomannan** from *Phytelephas macrocarpa*, and its dibenzoyl derivative (BAKER and POPE), T., 696; P., 1900, 72.
- Lævulose** (*fructose*) in beet leaves (LINDET), A., ii, 302.
 oxidation of, and compounds of, with the haloid salts of the alkaline earths (SMITH and TOLLENS), A., i, 378.
- Lamps** for spectra (BECKMANN), A., ii, 701.
- Langbeinite** from the Punjab (MALLET), A., ii, 22.
- Lapodin** from *Rumex palustris* and *R. obtusifolius* (HESSE), A., i, 41.
- Lard** and its substitutes, relative digestibility of, in the human intestine (LÜHRIG), A., ii, 355, 667.
- Larderellite** from the suffioni of Tuscany (D'ACHIARDI), A., ii, 600.
- Laricinolic** and α - and β -**Larinolic acids** (TSCHIRCH and WEIGEL), A., i, 680.
- Laricresinol**, dry distillation of (BAMBERGER and VISCHNER), A., i, 605.
- iso***Laricresinol**, preparation, and tetracetyl and dimethoxy derivatives of, and its isomeride (BAMBERGER and LANDSIEDL), A., i, 48.
- Larix decidua*, balsam of (TSCHIRCH and WEIGEL), A., i, 680.
- Lasur-oligoclase** from Lake Baikal (V. JEREMÉEFF), A., ii, 603.
- Latent image.** See Photochemistry.
- Laudanosine** (*d*-N-methyltetrahydropapaverine) and its salts (PICTET and ATHANASESCU), A., i, 685.
- Laumontite** from Petersburg, near Halle (LUEDECKE), A., ii, 218.
- iso***Lauronic acid**, constitution of (BLANC), A., i, 329.
- iso***Lauronolic acid** (LEES and PERKIN), P., 1900, 18.
- iso***Lauronolic acid**, constitution of (NOYES), A., i, 202; (BLANC), A., i, 581, 586.
 and its stereoisomeride, reactions and structure of (WALKER and CORMACK), T., 374; P., 1900, 58.
- Lavender**, development of terpenes in (CHARABOT), A., i, 241.
 oil of (JEANCARD and SATIE), A., i, 510.
- Law** of Cailletet and Mathias, and the critical density (YOUNG), A., ii, 711.
 of multiple proportions, lecture experiment on the (EMICH and DÖRNER), A., ii, 340.
- Lead**, sensitiveness of, to light (WATERHOUSE), A., ii, 585.
 equilibrium between zinc and, and mixtures of their fused chlorides (REINDERS), A., ii, 715.
- Lead compounds** with sodium, composition and melting point of (KURNAKOFF), A., ii, 277.
 analyses of (MENNICKE), A., ii, 688, 761.
- Lead salts**, action of sodium thiosulphate on (FAKTOR), A., ii, 688, 691.
- Lead chloride**, decomposition of (SODEAU), T., 717; P., 1900, 88.
tetrachloride and its double salts with amines (MEYER and BEST), A., ii, 78.
dioxide, change of resistance of (SUNDORPH), A., ii, 5.
triplumbic tetroxide (minium), estimation of (TOCHER), A., ii, 442.
peroxide, action of hydrogen sulphide on (VANINO and HAUSER), A., ii, 279.
 "peroxide" (KASSNER), A., ii, 725.
 selenides and chloroselenides (FONZES-DIACON), A., ii, 402.
 sulpharsenites. See Jordanite, Rathite, and Sartorite.
 polysulphide (BODROUX), A., ii, 480.
 thioantimonite and its double salt with potassium (POUGET), A., ii, 84.
- Lead organic compound** :—
 ferrocyanide (MILLER and FISHER), A., ii, 761.
- Lead, estimation and separation of** :—
 dry assay of (FLATH), A., ii, 512.
 electrolytic estimation of, in the sulphate and chromate, and in lead glass (MARIE), A., ii, 368.
 estimation of, in zinc (MACKAY), A., ii, 49.
 separation of, from bismuth (CLARK), A., ii, 371.
- Leather**, specific heat of (FLEURY), A., ii, 188.

- Leather**, analysis of (FAHRION), A., ii, 59.
- Lecithin**, preparation of (BERGELL), A., i, 621.
- Lees**, polarimetric estimation of sugars in (PELLET), A., ii, 113.
- Leguminosæ**. See Agricultural Chemistry.
- Lekene** from the wax of Bacillariaceæ (KRAEMER and SPILKER), A., i, 73.
- Lemon**, oil of, properties of (SOLDAINI and BERTÉ), A., ii, 173.
valuation of (WALTHER), A., ii, 173.
flavouring extracts and its substitutes, valuation of (MITCHELL), A., ii, 174.
- Lemonade essences**, testing (WENDER and GREGOR), A., ii, 767.
- Lentil seedlings**, proteolytic ferment of (HARLAY), A., ii, 744.
- Lepidium sativum**, constituents of (GADAMER), A., i, 49.
- Lepidolite**, cesium and rubidium salts from (FORMÁNEK), A., ii, 15.
- 2-Lepidyl-hydrazine**, -phenylthiosemicarbazide, and -semicarbazide (MARCKWALD and CHAIN), A., i, 521.
- Lettuce**. See Agricultural Chemistry.
- Leucæmia**, metabolism in (V. STEJSKAL and ERBEN), A., ii, 423.
- Leucine**, derivatives of (FISCHER), A., i, 647.
- ε-Leucine** (WALLACH), A., i, 590.
- Leucinimide**, constitution of, and base $C_{12}H_{26}N_2$, from (COHN), A., i, 466.
- Leucite**, action of ammonium chloride on (CLARKE and STEIGER), A., ii, 219.
- Leuco-base**, $C_{18}H_{25}N_3$, action of nitrous acid on (TRILLAT), A., i, 192.
- Leucocytes**, rôle of, in poisoning by arsenic (BESREDKA), A., ii, 156.
decomposition products of histon from (LAWROFF), A., i, 71.
- Leucomethylene-blue**, acyl derivatives of (COHN), A., i, 455.
- Leucophænicite** from New Jersey (PENFIELD and WARREN), A., ii, 89.
- Leucosphenite** from Greenland (FLINK), A., ii, 411.
- Leucotoxin** (BESREDKA), A., ii, 741.
- Leverrierite** from Rochebelle, Gard (TERMIER), A., ii, 86.
- Libollite** from Portuguese West Africa (GOMES), A., ii, 86.
- Light**, polarised, method of showing the properties of (UMOFF), A., ii, 181.
influence of, on the respiration of lower Fungi (KOLKWITZ), A., ii, 361.
effect of, filtered through leaves, on chlorophyll assimilation (GRIFFON), A., ii, 159.
- Light**, influence of, on the production of proteids in plants (PALLADIN), A., ii, 612.
See also Photochemistry.
- Lime**. See Calcium oxide, and Agricultural Chemistry.
- Limestone**, estimation of calcium in, photometrically (HINDS), A., ii, 575.
- Limestones** from Moravia (KOVÁŘ), A., ii, 147, 148.
- d-Limonene** from carvone (TSCHUGAEFF), A., i, 352.
- Limonenes**, ψ - and σ -, formulæ of (SEMMLER), A., i, 453.
- Limonite** from Moravia (KOVÁŘ), A., ii, 148.
pseudomorphs from Dutch Guiana (RAYMOND), A., ii, 86.
- Linalool-group**, metamorphoses and migrations of compounds of the, in plants (CHARABOT), A., i, 241; ii, 101, 361, 362.
- Linseed oil**, analysis of (McILHINEY), A., ii, 633.
- Liparite** from Sumatra (MILCH), A., ii, 150.
- Liquefaction** of a gas by "self-cooling" (NEWTN), P., 1900, 87.
of gaseous mixtures (CAUBET), A., ii, 191, 390, 646.
- Liquids**, absorption spectra of, in the ultra-red (PUCCIANI), A., ii, 585.
transparency of, to electric oscillations (DE HEEN), A., ii, 524.
equation of condition for; determination of the constants a and b of van der Waal's equation (GUYE and FRIDERICH), A., ii, 709.
van't Hoff's equation and molecular weights of (SPEYERS), A., ii, 10.
molecular association in (BERTHELOT), A., ii, 335, 337.
minimum volume of (GULDBERG), A., ii, 264; (BERTHELOT), A., ii, 335.
supercooled, velocity of solidification and viscosity of (WILSON), A., ii, 712.
organic, surface tension of (DUTOIT and FRIDERICH), A., ii, 194.
flocculation of (SPRING), A., ii, 713.
reciprocal solubility of (BRUNI), A., ii, 196.
fermented, estimation of succinic acid in (LABORDE and MOREAU), A., ii, 114.
- Liquorice** extract, estimation of glycyrrhizin in (HAFNER), A., ii, 328, 775.
pastes, analysis of (TRUEBECK), A., ii, 378.
- Lithium** in plants (TSCHERMAK), A., ii, 235.

- Lithium**, preparation of metallic (KAHLENBERG), A., ii, 206.
melting point of (KAHLBAUM), A., ii, 277.
- Lithium amalgam** (KEPP and BÖTTGER), A., ii, 656.
- Lithium aluminates** (ALLEN and ROGERS), A., ii, 727.
antimonide, arsenide, bismuthide, and stannide (LEBEAU), A., ii, 276.
bromide and iodide, temperature of maximum density of solutions of (DE COPPET), A., ii, 529.
compounds of, with gaseous ammonia (BONNEFOI), A., ii, 478.
chloride and nitrate, electrical conductivity of solutions of (KOHLE-RAUSCH and MALTBY), A., ii, 61.
compounds of, with ethylamine (BONNEFOI), A., ii, 130.
peroxide and its hydrate, thermochemistry of (DE FORCRAND), A., ii, 478.
thioantimonites and double salts with silver (POUGET), A., ii, 84.
- Lithium-tungsten bronze** (STAVENHAGEN), A., ii, 80.
- Liver**, aldehydase from the (JACOBY), A., i, 711.
constituents of the, which form sugars (SEESEN), A., ii, 29.
formation of ammonia in the, and changes in the, during phosphorus poisoning (JACOBY), A., ii, 671.
urea in the (GOTTLIEB), A., ii, 29.
results of the extirpation of, in dogs (SALASKIN and ZALESKI), A., ii, 607.
- Liver extracts**, action of, on salicyl-aldehyde (MEDVEDEFF), A., ii, 738.
- Liverworts**, chemistry of the cell membranes of (CZAPEK), A., i, 556.
- Löllingite** from the Harz (SCHEIBE), A., ii, 661.
- Lorenzenite** from Greenland (FLINK), A., ii, 411.
- Lotus corniculatus**. See Agricultural Chemistry.
- Lucerne**. See Agricultural Chemistry.
- Lucerne seeds**, carbohydrates in (BOURQUELOT and HÉRISSEY), A., ii, 301.
enzyme of (BOURQUELOT and HÉRISSEY), A., ii, 233.
- Luminescence** of ring compounds (KAUFFMANN), A., i, 480.
- Luminosity** of 1-ethyl-2-quinolone (DECKER), A., i, 688.
- 2:4-Lupetidine**. See 2:4-Dimethyl-piperidine.
- Lupins**. See Agricultural Chemistry.
Lupinus albus. See Agricultural Chemistry.
- Luteolin**, constitution and dimethyl ether of (PERKIN), P., 1899, 242.
and its methyl ethers, decomposition products and salts of (PERKIN and HORSFALL), T., 1314; P., 1900, 181.
methyl ether, and its triacetyl and tribenzoyl derivatives (VONGERICHTEN), A., i, 681.
- Lutidine**. See 2:6-Dimethylpyridine.
- Lutidine** (b. p. 148°-156°), from methyl-cyclohexanoneoxime (WALLACH), A., i, 45.
- Lutidinedicarboxylic acid**. See 2:6-Dimethylpyridine:3:5-dicarboxylic acid.
- 2:6-Lutidyl**. See 2:6-Dimethylpyridyl.
- 2:4-Lutidylalkine**. See 2-Hydroxyethyl-4-methylpyridine.
- Lymph**, properties and formation of (ASHER and GIES), A., ii, 673.
influence of protoplasmic poisons on the formation of (GIES and ASHER), A., ii, 291.
proteids of, action of lymphagogues on (TIMOFEEFFSKY), A., ii, 95.
- Lysine** (HENDERSON), A., i, 571.
from the proteid of conifer seeds (SCHULZE and WINTERSTEIN), A., ii, 101.
from the proteid of *Lupinus luteus* seedlings (SCHULZE), A., ii, 101.
constitution of (ELLINGER), A., i, 143; (HENDERSON), A., i, 571.
- d-Lyxose** and its phenylbenzylhydrazone (RUFF and OLLENDORFF), A., i, 476.
action of hydrocyanic acid on (FISCHER and RUFF), A., i, 539.

M.

- Macassar oil** (WIJS), A., ii, 252.
- Macleyine**. See Protopine.
- Magenta**, action of sodium hydroxide on (HANTZSCH), A., i, 365.
compounds of, with acidic colouring matters, composition of (SEYEWETZ), A., i, 522.
compounds of, with acidic colouring matters having a basic chromophore (SEYEWETZ), A., i, 645.
compounds of, with sulpho-azo-colouring matters (SEYEWETZ), A., i, 614.
- Magnesium**, action of, on saline solutions (TOMMASI), A., ii, 16; (MOURAOUR), A., ii, 206.
action of metallic, on water (BRYANT), A., ii, 278.
metabolism of (LEIPZIGER), A., ii, 223.

- Magnesium alloy** with platinum (HODGKINSON, WAHNG, and DESBOROUGH), A., ii, 282.
- Magnesium salts**, influence of ammonia on (SCHIEBER), A., ii, 345.
- Magnesium ammonium arsenate** (AUSTIN), A., ii, 245.
- orthoborate* (OUVRARD), A., ii, 206.
- bromide, electrolysis of solutions of (SARGHEL), A., ii, 401.
- carbonate, anhydrous (ENGEL), A., ii, 17.
- ammonium phosphate, composition of (NEUBAUER; GOOCH and AUSTIN), A., ii, 108.
- potassium sulphate, hydrate of (VAN'T HOFF and KASSATKIN), A., ii, 284.
- potassium and magnesium rubidium sulphates (MALLET), T., 219, 223; P., 1899, 227.
- Magnesium new organo-metallic compounds** (GRIGNARD), A., i, 382.
- Magnesium, estimation of:**—
estimation of, volumetrically (MEADE), A., ii, 48; (HANDY), A., ii, 314.
- Magnetic behaviour of alcohols** (HEINRICH), A., ii, 707.
- of aromatic hydrocarbons (FREITAG), A., ii, 708.
- field, action of the, on Becquerel rays, and on rays from polonium and radium (CURIE), A., ii, 126.
- effect of the, on radium radiations (BECQUEREL), A., ii, 182, 183.
- influence of the, on rays from radioactive substances (BECQUEREL), A., ii, 126.
- pyrites. See Pyrrhotite.
- rotation. See Photochemistry.
- susceptibility, determination of some coefficients of (MEYER), A., ii, 385.
- of inorganic compounds (MEYER), A., ii, 7; (KÖNIGSBERGER), A., ii, 258.
- Magnetism**, atomic and molecular (MEYER), A., ii, 7, 385; (LANG), A., ii, 707.
- influence of, on chemical reactions (DE HEMPTINNE), A., ii, 707.
- molecular, of salts of the rare earths (DU BOIS and LIEBKNECHT), A., ii, 127, 333; (MEYER), A., ii, 186.
- of salts of the iron group (DU BOIS and LIEBKNECHT), A., ii, 128; (LIEBKNECHT and WILLS), A., ii, 187.
- Magnetite** from near Rome (ZAMBONINI), A., ii, 147.
- Magnetites**, titaniferous (KEMP), A., ii, 283.
- Magnus salt** (JÜRGENSEN), A., i, 542; (BILLMANN), A., i, 543.
- Maize and Maize gluten.** See Agricultural Chemistry.
- Maize oil** (*corn oil*), constants of (WILLIAMS), A., ii, 582.
- physical and chemical constants of (VULTE and GIBSON), A., ii, 697.
- adulteration of cotton seed oil with (MORPURGO and GÖTZL), A., ii, 377.
- Malic acid** from *Hippophaë rhamnoides* (ERDMANN), A., i, 135.
- optical rotation of, in the pure state and in solution (WALDEN), A., i, 11.
- oxidation of, in presence of ferrous salts (FENTON and JONES), T., 75; P., 1899, 224.
- oxidation of, by potassium permanganate (DENIGES), A., i, 204.
- estimation of (HILGER), A., ii, 768.
- estimation of, in tartar and grapes (ORDONNEAU), A., ii, 250.
- Malic acid**, beryllium alkali salts of (ROSENHEIM and ITZIG), A., i, 135.
- molybdo- and tungsto-alkali salts of, specific rotatory power of (ROSENHEIM and ITZIG), A., i, 272.
- l*-Malic acid, action of heat on (WALDEN), A., i, 10.
- Malic acids**, α - and β -, and their salts (ORDONNEAU), A., i, 203.
- Malonaldehyde**, nitro-, condensation of, with ketones and ketonic acids (HILL, SOCH, and OENSLAGER), A., i, 538.
- Malonamide**, action of nitrosyl chloride on, and of hydroxylamine on its dibromo-derivative (WHITELEY), T., 1040; P., 1900, 145.
- Malonic acid**, condensation of, with dibromo- α -naphthaquinone (LIEBERMANN), A., i, 310.
- action of iodine on a pyridine solution of (ORTOLEVA), A., i, 558.
- semi-aldehyde of (WOHL and EMMERICH), A., i, 627.
- Malonic acid**, ethyl ester, action of bromine and carbon disulphide on the sodium derivative of (WENZEL), A., i, 536.
- condensation of, with formaldehyde (BOTTOMLEY and PERKIN), T., 294; P., 1900, 16.
- condensation of the sodium derivative of, with ethyl $\alpha\alpha'$ -dibromo- $\beta\beta$ -dimethylglutarate (PERKIN, THORPE, and WALKER), P., 1900, 149.
- action of dry silver oxide and ethyl iodide on (LANDER), T., 743; P., 1900, 6, 90.
- Malt**, nitrogenous substances in (PETIT and LABOURASSE), A., ii, 680.

- Malt**, dissolution of the nitrogenous compounds in (PETIT and LABOURASSE), A., ii, 611.
 proteolytic diastase of (FERNBACH and HUBERT), A., ii, 576, 616.
 proteolytic enzyme of (WINDISCH and SCHELLHORN), A., i, 712.
- Malt-germ molasses.** See Agricultural Chemistry.
- Maltodextrin** (POTTEVIN), A., i, 81.
- isoMaltose**, Lintner's (POTTEVIN), A., i, 77.
- Mandarins**, oil of, methyl methylantranilate in (WALBAUM), A., i, 595.
- Manganese**, activity of, in promoting the phosphorescence of strontium sulphide (MOURLO), A., ii, 141.
- Manganese salts**, estimation of, by an alkaline solution of arsenious acid (REICHARD), A., ii, 109.
- Manganese borate** (OUVRARD), A., ii, 207.
*di*bromide and *tri*- and *tetra*-chlorides (MEYER and BEST), A., ii, 77.
 chloride, stable hydrates of (DAWSON and WILLIAMS), A., ii, 210.
*tetra*chloride, formation of (WACKER), A., ii, 470.
 chlorides, compounds of, with potassium chloride and with cesium chloride (MEYER and BEST), A., ii, 77.
*tri*fluoride (Mn_2F_6), preparation and properties of (MOISSAN), A., ii, 280.
dioxide, formation of (WACKER), A., ii, 470.
 electrodes, potential differences with (TOWER), A., ii, 331.
 oxide, $22MnO_2 \cdot MnO_3 \cdot xH_2O$ (CHRISTENSEN), A., ii, 596.
- Manganic acids**, estimation of, by an alkaline solution of arsenious acid (REICHARD), A., ii, 109.
- Permanganic acid**, preparation of, by electrolysis (MORSE and OLSEN), A., ii, 482.
- Permanganomolybdates** (FRIEDHEIM and SAMELSON), A., ii, 547.
 selenide and oxyselelide (FONZES-DIAON), A., ii, 348.
 copper sulphates, solubility of (STORTENBEKER), A., ii, 530.
 potassium sulphate (MALLET), T., 221; P., 1899, 227; (MEYER and BEST), A., ii, 78.
 thioantimonite and its double salt with potassium (POUGET), A., ii, 84.
- Manganous salts** and ammonia, equilibrium between (HERZ), A., ii, 68.
- Manganous fluoride**, MnF_2 (MOISSAN and VENTURI), A., ii, 405.
- Manganous iodide**, hydrates of (KUTZ NETZOFF), A., ii, 657.
- Manganese organic compounds**:—
 compounds of, with acetic acid (MEYER and BEST), A., ii, 77.
- Manganese, estimation of**:—
 estimation of, as pyrophosphate (BÖTTGER), A., ii, 443.
 estimation of, as sulphide (J. and H. S. PATTINSON), A., ii, 443.
 estimation of, in iron (HERTING), A., ii, 245.
 estimation of, volumetrically, in pig-iron, cast-iron, and steel (MIGNOT), A., ii, 690.
 estimation of, volumetrically, in iron or steel (NAMIAS), A., ii, 50.
 estimation of, in steel (JERVIS), A., ii, 444.
 estimation of, electrolytically, in manganese ores (HIGNES), A., ii, 444.
- Manganese ore** from the Amazon district (KATZER), A., ii, 733.
- Manganese nodules** from New South Wales (DOHERTY), A., ii, 283.
- Manganocalcite** from Chemnitz. See Angolite.
- Mangel-wurzel.** See Agricultural Chemistry.
- d*-**Mannitol**, compounds of, with nitrobenzaldehydes (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- Mannocellulose** in the tissues of gymnosperms (BERTRAND), A., ii, 610.
- Mannogalactan** from *Strychnos potatorum* and its dibenzoyl derivative (BAKER and POPE), T., 696; P., 1900, 72.
 from the seeds of *Trifolium repens* (HÉRISSEY), A., ii, 561.
- Mannose**, production of, by an enzyme (BOURQUELOT and HÉRISSEY), A., ii, 35, 233; (HÉRISSEY), A., ii, 561.
 from the albumen of the St. Ignatius bean and nux vomica (BOURQUELOT and LAURENT), A., ii, 498, 611.
 from invertin (KÖLLE), A., i, 572.
- Manometer**, differential, new (BLEIER and KOHN), A., ii, 192.
- Manostat** (SMITS), A., ii, 388.
- Mantles**, luminosity of, of mixtures of ceria and thoria (THIELE), A., ii, 208.
- "Manur"**—a cheese from Servia (ZEGA), A., ii, 503.
- Manures**, estimation of potash in (ADIE and WOOD), T., 1079; P., 1900, 17.
 estimation of available phosphoric acid in (VERTCH), A., ii, 166.
 estimation of phosphoric acid available as plant food in (FLOW), A., ii, 510.

- Manures**, artificial, containing nitrates, estimation of nitrogen in (VEITCH), A., ii, 166.
See also Agricultural Chemistry.
- Marbles** (VOGT), A., ii, 734.
- Marc wines**. See Wine.
- Marcasite**, composition and heat of combustion of (CAVAZZI), A., ii, 598.
- Margarine** and butter, relative digestibility of, in the human intestine (LÜHRIG), A., ii, 224, 667.
nutritive value of, compared (BERTARELLI), A., ii, 224.
detection of yolk of egg in (MECKE), A., ii, 123.
detection of sucrose in (MECKE), A., ii, 319.
detection of sesamé oil in (BÖMER and WINTER), A., ii, 178; (BREMER; SOLTSIEN), A., ii, 325; (AMTHOR), A., ii, 453.
detection of, in cheese (FASCETTI and GHIGI), A., ii, 377.
- Maripa fat** (VAN DEN DRIESSEN-MAREEUW), A., ii, 773.
- Marls**, estimation of calcium carbonate in (NOLL), A., ii, 48.
See also Agricultural Chemistry.
- Marsjatskite** from Bogoslowsk, Urals (v. FEDOROFF and NIKITIN), A., ii, 486.
- Mass law** and physical reactions (LINCOLN), A., ii, 392.
- Mastic resin**, examination of (DIETERICH), A., ii, 118.
- Meat**, preserved, isolation of glycogen from (BRUFSTEDT), A., ii, 321.
estimation of boric acid in (BEYTHJEN and HEMPEL), A., ii, 313.
estimation of tin in, and the state in which it occurs (WIRTHLE), A., ii, 512.
- Meat extract**, carnosine from (v. GULEWITSCH and AMIRADŽIBI), A., i, 516.
- Meconic acid**, constitution of (PERATONER and LEONARDI), A., i, 550.
- Meconin**, thermochemistry of (LEROY), A., ii, 261.
- Meconindimethyl ketone** and its salts and methyl derivative (FULDA), A., i, 36.
- Melibiose**, crystallised (BAU), A., i, 77.
- Melilite group** of minerals (FOUQUÉ), A., ii, 551.
- Melinite** (?) from Moravia (KOVÁŘ), A., ii, 148.
- Melite** from Saalfeld, Thuringia (ZAMBONINI), A., ii, 150.
- Melitriose**. See Raffinose.
- Melonite** (?) from California (HILLEBRAND), A., ii, 22.
- Melonite** from S. Australia (HIGGIN), A., ii, 283; (DIESELDORFF), A., ii, 664.
- Melting point** and volume change (TAMMANN), A., ii, 714.
of various substances (LADENBURG and KRÜGEL), A., ii, 259.
of alkyldicarboxylic acids, and their amic acids and imides (AUWERS, MAYER, and SCHLEICHER), A., i, 85.
of homologues, regularities in the (SALZER), A., ii, 260.
relation between the boiling point and, in hydrocarbons (BAYLEY), A., i, 369.
- Melting point curves** of mixed crystals (ROOZEBOOM; REINDERS), A., ii, 70; (VAN ELJK), A., ii, 133.
of mixtures of optical isomerides (ROOZEBOOM), A., ii, 64; (ADRIANI), A., ii, 463.
- Melting point determinations**, method for (KUHARA and CHIKASHIGÉ), A., ii, 260.
apparatus for (HOUBEN), A., ii, 645.
apparatus for drying substances for (STREATFIELD and SOUTHERDEN), A., ii, 718.
- Membranes**, animal, influence of, on the diffusion of various substances (HEDIN), A., ii, 221.
semipermeable, electrolysis through (MORITZ), A., ii, 522.
- Memorial lectures**: Victor Meyer (THORPE), T., 169; P., 1900, 33; Bunsen (ROSCOE), T., 513; P. 1900, 84; Friedel (CRAFTS), T., 993; Nilsson (PETTERSSON), T., 1277.
- Mentha piperita*, oil of (CHARABOT), A., i, 303.
- Menthane**, nitration of (KONOWALOFF and JEBENKO), A., i, 324.
- Menthanementhylhydrazone** (KIJNER), A., i, 278.
- Menthazine** (KIJNER), A., i, 279.
- Menthene** from menthol (KONOWALOFF), A., i, 352.
synthesis of (TSCHUGAEFF), A., i, 129.
genesis of, in *Mentha piperita* (CHARABOT), A., i, 303.
- 7-Menthol**, action of dry silver oxide and ethyl iodide on (LANDER), T., 731; P., 1900, 6.
- Menthol series**, isomerism in the (KONDAKOFF and LUTSCHININ), A., i, 104, 604.
- Menthomenthol**, preparation of (KONDAKOFF and LUTSCHININ), A., i, 104.
- Menthone**, genesis of, in *Mentha piperita* (CHARABOT), A., i, 303.
transformation of rhodinal into (BOUVEAULT), A., i, 452.
oxidation of (MARKOWNIKOFF), A., i, 476.

- Menthoneisoxime** and its hydrolysis (WALLACH), A., i, 590.
- Menthonsemicarbazone** (RIMINI), A., i, 555.
- Menthylamines**, bromo-, action of silver oxide on (KIJNER), A., i, 278.
- 7-Menthylhydrazine** and its compound with phenylthiocarbimide (KIJNER), A., i, 278.
- Mercaptans** (*thiols*), aromatic, preparation of (BOURGEAIS), A., i, 163.
- Mercaptans**. See also :—
 Ethyl mercaptan.
 2:6-Lutidyl 4-mercaptan.
 Methyl-naphthiazolyl mercaptan.
 Methylpyrimidinethiols.
 Naphthiazolyl mercaptan.
 β -Naphthyl mercaptan.
 Phenyl mercaptan.
 Pyridyl mercaptan.
 Toly mercaptans.
 Xylylene hydrosulphides.
 Xylenemethylenemercaptals.
- Mercaptoles** (POSNER and FAHRENHORST), A., i, 16.
 of ketonic acids (POSNER), A., i, 5;
 (POSNER and FAHRENHORST), A., i, 16.
- Mercurbide** and its salts (HOFMANN), A., i, 383.
- Mercury**, purification and vapour tension of (HULETT), A., ii, 543.
 vapour density of (BAKER), T., 648; P., 1900, 68.
 compressibility of (HULETT), A., ii, 397.
 solubility of metals in (LARSEN), A., ii, 255.
 action of, on methylene iodide (THOMAS), A., i, 213.
- Mercury alloys** (*amalgams*) (KURNAKOFF), A., ii, 277; (GUNTZ and FÉRÉE), A., ii, 540; (KERP and BÖTTGER), A., ii, 656.
 dilute, influence of temperature on the electrical conductivity of (LARSEN), A., ii, 255.
 distillation of (HULETT), A., ii, 543.
 with aluminium, action of, on alcohols (TISCHENKO), A., i, 269.
 with cadmium, with lithium, with rubidium, and with strontium (KERP and BÖTTGER), A., ii, 656.
 with potassium and sodium (KURNAKOFF), A., ii, 277; (GUNTZ and FÉRÉE), A., ii, 540; (KERP and BÖTTGER), A., ii, 656.
- Mercurammonium compounds**, formulæ of (HOFMANN and MARBURG), A., ii, 279.
- Diammoniomercuric iodide**, action of ammonia on (FRANÇOIS), A., ii, 208, 346.
- Mercurammonium compounds** :—
Mercuriammonium iodide, formation of (FRANÇOIS), A., ii, 346.
Dimercuriammonium iodide, anhydrous, amorphous and crystalline (FRANÇOIS), A., ii, 280.
- Mercury compounds**, isomorphous, with gold (BEHRENS), A., ii, 213.
- Mercury salts**, action of sodium thio-sulphate on (FAKTOR), A., ii, 627; (NORTON), A., ii, 689.
- Mercury antimonide** (PARTHEIL and MANNHEIM), A., i, 479.
 iodides, direct formation of crystallised (BODROUX), A., ii, 543.
 ammonium and potassium iodides, dissociation of (FRANÇOIS), A., ii, 142.
 phosphide and the action of methyl and ethyl iodide on (PARTHEIL), A., ii, 543.
 selenide, action of hydrogen on, and the inverse action (PELABON), A., ii, 346.
 chlorosulphide (BODROUX), A., ii, 481.
- Mercuric bromide** and iodide, mixed crystals of (REINDERS), A., ii, 70.
 chloride (*corrosive sublimate*), action of, on hydrogen phosphide (PARTHEIL), A., ii, 543.
 effect of oxidising agents on the reduction of, by oxalic acid (KASTLE and BEATTY), A., ii, 627.
 estimation of, volumetrically (RUPP), A., ii, 628.
 estimation of, in dressings (LEHMANN), A., ii, 443, 511; (UTZ), A., ii, 762.
- iodide, transformation temperature of (GERNEZ), A., ii, 141.
 effect of solvents on the allotropic change of (KASTLE and CLARK), A., ii, 141.
 action of, on alkyl sulphides (SMILES), T., 163; P., 1899, 240.
 action of ammonia on (FRANÇOIS), A., ii, 208.
- oxide, red and yellow, isomerism of (COHEN), A., ii, 184, 381; (OSTWALD), A., ii, 712.
 action of iodine on (ORTON and BLACKMAN), T., 835; P., 1900, 104.
- Mercurous chloride**, vapour density of dried (BAKER), T., 646; P., 1900, 68.
 iodide (RÂY), P., 1899, 239.
 nitrite, action of, on ethyl iodide (RÂY), P., 1899, 239.
 sulphate, action of water on (GOUY), A., ii, 481.

Mercury organic compounds:—

Mercury salts, action of allyl alcohol on (SAND and HOFMANN), A., i, 386; (BILLMANN), A., i, 431; (HOFMANN and SAND), A., i, 618.

action of ethylene on (HOFMANN and SAND), A., i, 384, 618; (BILLMANN), A., i, 431.

action of propylene and butylene on (SAND and HOFMANN), A., i, 385.

of ketonic acids, and their conversion into mercurioketonic acids (LEY), A., i, 382.

Mercury halogen derivatives, compounds of, with antipyrine (VILLE and ASTRE), A., i, 362, 411.

compounds of, with iodoantipyrine, (BOUGAULT), A., i, 361.

sulphate, compound of, with acetone-dicarboxylic acid (DENIGÈS), A., i, 89.

Mercuriacetic acid, bromo- and iodo- (HOFMANN and SAND), A., i, 385.

Trimercuriacetic acid (HOFMANN), A., i, 383.

Mercuribenzoic acid, chloro-, bromo-, and iodo-, and their salts (PESCI), A., i, 546.

Mercurilaevalic acids (LEY), A., i, 382.

Mercurisalicilic acid (LINTNER), A., ii, 631.

Mercuric cyanide and cyanate, estimation of (VINCENT), A., ii, 174.

Mercury-dimethyl, -diethyl, and -diphenyl, heat of combustion and of formation of (BERTHELOT), A., ii, 129.

Mercurydimethyl, action of nitric peroxide on (BAMBERGER and MÜLLER), A., i, 145.

p-**Mercuriodiphenylenetetraethylmercuridiammonium acetate**, physiological action of (BENEDICENTI and POLLEDRO), A., ii, 359.

"**Mercurioheptanaphthene iodide**" (KURANOFF), A., i, 89.

Mercury, detection and estimation of:— delicate test for (CAZENEUVE), A., i, 465.

detection of, in urine (HOEHNEL), A., ii, 368; (JOLLES), A., ii, 576.

estimation of, in urine (SCHUMACHER and JUNG), A., ii, 247; (JOLLES), A., ii, 576; (FARUP; WERDER), A., ii, 689.

clinical estimation of, in urine (ESCHBAUM), A., ii, 368.

estimation and separation of, as mercurous oxalate (PETERS), A., ii, 576.

β-**isoMeroquinene** (*β*-isomerochinene) and its aurichloride (SKRAUP), A., i, 605.

Mesenteric cyst, composition of the liquid contained in a (RICHAUD and BONNEAU), A., ii, 557.

Mesidine, bromo- [$\text{Me}_3\text{NH}_2\text{Br} = 1:3:5:2:4$] (FISCHER and WINDAUS), A., i, 484.

Mesitol, *di*- and *tri*-bromo-, oxidation products of (AUWERS), A., i, 161; (AUWERS, BROICHER, and WOLFF), A., i, 162.

phenylurethanes of (AUWERS, TRAUN, and WELDE), A., i, 166.

Mesityl bromide, action of sodium on (WEILER), A., i, 213.

Mesitylene (1:3:5-*trimethylbenzene*), refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237. oxidation of (WEILER), A., i, 284.

Mesitylene, bromo-, action of sodium on (WEILER), A., i, 213.

chloro-iodo-, -iodoso-, -iodoxy-, -iodoso-, and -iodoxy-, and some of their salts (WILLGERODT and ROGATZ), A., i, 432.

Mesitylenediazoidide (HANTZSCH), A., i, 568.

Mesityl oxide (*methyl isobutenyl ketone*; *isopropylideneacetone*), its halogen and acetoxy and methoxy derivatives (PAULY and LIECK), A., i, 274.

action of amides on (TRAUBE and SCHWARZ), A., i, 116.

condensation of, with ethyl sodio-methylmalonate (CROSSLEY), P., 1900, 90.

α-**Mesityloxime**, oxidation of (HARRIES), A., i, 504.

Mesoxamide, oxime of, and its salts and acetyl and ethyl derivatives, and the action of nitrous acid on (WHITELEY), T., 1040; P., 1900, 145.

Metabolism, influence of the kind and amount of nutriment on (PFLÜGER), A., ii, 91.

influence of sodium salicylate on (GOODBODY), A., ii, 670.

influence of removal of water on (STRAUB), A., ii, 91.

human, rôle of purine substances in (BURIAN and SCHUR), A., ii, 489.

during poisoning with pulegone (LINDEMANN), A., ii, 223.

nitrogenous, after splenectomy (MENDEL and JACKSON), A., ii, 288.

proteid (ALBU), A., ii, 151.

during gelatin feeding (KIRCHMANN), A., ii, 669.

influence of sodium chloride injected subcutaneously on (KRUMMACHEL), A., ii, 670.

Metabolism, proteid, in plants (SCHULZE), A., ii, 745.
 in pernicious anæmia (v. MORACZEWSKI), A., ii, 295.
 in leucæmia (v. STEJSKAL and ERBEN), A., ii, 423.
 in children (CAMERER and SÖLDNER), A., ii, 222.
 mineral, in naturally and artificially fed infants (BLAUBERG), A., ii, 669.
 in a vegetarian (RUMPF and SCHUMM), A., ii, 222.
 in full-grown bullocks with maintenance and fattening foods (KELLNER and KÖHLER), A., ii, 563, 565, 566.
 nitrogenous, in the cat (MENDEL and BROWN), A., ii, 151.
 in frogs (v. MORACZEWSKI), A., ii, 31.
 in horses (PFEIFFER), A., ii, 554.
 in Ruminants (HAGEMANN), A., ii, 222.
 proteid, in Ruminants, influence of ammonia and asparagine on (KELLNER, KÖHLER, BARNSTEIN, ZIELSTORFF, EWERT, and WEDEMEYER), A., ii, 417.
 of arsenic (GAUTIER), A., ii, 670.
 with edestin, and with calcium and magnesium (LEIPZIGER), A., ii, 223.
 of iodine (GAUTIER; BOURCET), A., ii, 670.
 of nuclein (LOEWI), A., ii, 417.
 of nucleins (MILROY and MALCOLM), A., ii, 91.
 of phosphorus (NOËL-PATON, DUNLOP, and AITCHISON), A., ii, 222; (LEIPZIGER), A., ii, 223.
 gaseous, of the submaxillary gland (BARCROFT), A., ii, 417.
Metal-ammonia compounds, nature of, in aqueous solution (DAWSON and McCRAE), T., 1239; P., 1900, 172.
Metallic chlorides, decomposition of (OECHSNER DE CONINCK), A., ii, 485, 543.
 compounds, fluorescence of, under the influence of Röntgen and Becquerel rays (BARY), A., ii, 330.
 crystallisation by electric currents (TOMMASINA), A., ii, 185; (TOMMASI), A., ii, 339.
 hydroxides, energy of some, deduced from the hydrolysis of their salts (CARRARA and VESPIGNANI), A., ii, 647.
 salts, effect of concentration on the magnetic rotation of (FORCHHEIMER), A., ii, 524.
 action of alkali hydroxides and bromine on (VITALI), A., ii, 208.
 solutions, colloidal. See Colloidal.

Metals, indices of refraction of (VAN AUBEL), A., ii, 125.
 influence of light on the electrical properties of (BUISSON), A., ii, 519.
 passivity of (HITTOFF), A., ii, 705.
 specific heat of (TILDEN), A., ii, 524.
 specific heat of, at low temperatures (BEHN), A., ii, 259.
 reciprocal displacement of (COLSON), A., ii, 140.
 catalytic action of some (ŠULC), A., ii, 395.
 solubility of, in mercury (LARSEN), A., ii, 255.
 electrolytically deposited, reducing action of (BINZ and HAGENBACH), A., ii, 384.
 action of very dilute nitric acid on (VAN BIJLERT), A., ii, 204.
 influence of, on broth cultures of Bacteria (ISACHENKO), A., ii, 230.
 combination of, with nucleins (STASSANO), A., ii, 559.
 heavy, fused halogen compounds of, change of free energy and ionic concentrations in (LORENZ), A., ii, 61.
 noble, alloys of the, estimation of iridium in (MIETZSCHKE), A., ii, 371.
 behaviour of rhodium in (RÜSSLER), A., ii, 732.
 application of the Kjeldahl method of destroying organic substances in the detection of (GRAS and GINTL), A., ii, 111.
 diphenylcarbazide as a reagent for (CAZENEUVE), A., ii, 627.
 detection of, by the absorption spectra of their compounds with alkanna (FORMÁNEK), A., ii, 687.
 estimation of arsenic in (HOLLARD and BERTIAUX), A., ii, 438.
Metapurpuric acid. See under Purpuric acid.
Meteoric irons (COHEN), A., ii, 664.
 from Bethany, Great Namaqualand (COHEN), A., ii, 736.
 from Griqualand East, South Africa (COHEN), A., ii, 736.
 from Iredell, Texas (FOOTE), A., ii, 150.
 from Morradal, Norway (COHEN), A., ii, 488.
 from Patagonia (FLETCHER), A., ii, 27.
 from Quesa, Spain (BOSCA Y CASANOVES; COHEN), A., ii, 415.
 from Youndegin, Western Australia (FLETCHER), A., ii, 27.
Meteorite, new, from Allegan, Michigan, and from Mart, Texas (MERRILL and STOKES), A., ii, 737.

- Meteorite** from Ergheo, Somaliland (ARTINI and MELZI), A., ii, 488.
 from Illinois Gulch, Montana (PRESTON), A., ii, 287.
 from Jamyscheff and Tubil river, Siberia (ANTIPOFF), A., ii, 220.
 from Oakley, Kansas (PRESTON), A., ii, 552.
- Meteorites**, two new American (PRESTON), A., ii, 355.
- Methæmoglobin**. See under Hæmoglobin.
- Methane** and mixtures of methane and hydrogen and air, limits of combustibility of, passed over red-hot cupric oxide (GAUTIER), A., ii, 469.
 tri- and tetra-halogen substituted, action of alcoholic potash, sodium ethoxide, or potassium cyanide and metals on (NEF), A., i, 2.
 bromine derivatives of (POURET), A., i, 369.
tetrachloro-. See Carbon *tetrachloride*.
 nitro-, action of alkalis and ammonia on (DUNSTAN and GOULDING), T., 1262; P., 1900, 174.
 isonitro-, action of diazobenzene on (BAMBERGER, SCHMIDT, and LEVINSTEIN), A., i, 566.
- Methazonic acid**, preparation, constitution and reactions of (DUNSTAN and GOULDING), T., 1264; P., 1890, 174.
- Methenyl compounds**, mixed (ERRERA), A., i, 33.
- Methoethene-5-hexene-2-acid-6**. See α -*iso*Propylidene- γ -hexenoic acid.
- Methoethylol-5-hexene-2-acid-6**. See α -Hydroxyisopropyl- γ -hexenoic acid.
- 2-Methothio-1-phenyl-4:4:6-trimethyl- and 2-Methothio-4:4:6-trimethyl-1-allyl dihydropyrimidine** (TRAUBE and LORENZ), A., i, 116.
- Methoxide**, sodium, action of, on the dibromides of propenyl compounds and of unsaturated ketones (POND, MAXWELL, and NORMAN), A., i, 102.
- 2-Methoxyacetylacetophenone** (BLOCH and v. KOSTANECKI), A., i, 502.
- p-Methoxybenzonitrile** (HENRY), A., i, 172.
- o-Methoxybenzyl alcohol** and methyl and ethyl ethers (PSCHORR, WOLFES, and BUCKOW), A., i, 232.
- β -Methoxy- β -benzylacrylic acid**, α -cyano-, methyl ester (HALLER and BLANC), A., i, 496.
- p-Methoxybenzylidenebis-2-methylindole** (v. WALTHER and CLEMEN), A., i, 408.
- Methoxybenzylidene-*d*- and -*l*-camphors**, *o*- and *p*- (HALLER), A., i, 301.
- p-Methoxybenzylidene-2-naphthylamine**, 1-bromo- and 1-chloro-, and their hydrocyanides (MORGAN), T., 1216; P., 1900, 171.
- 4-Methoxydibromooanthraquinone** (PSCHORR and JAECKEL), A., i, 489.
- p-Methoxycinnamic acid**, ethyl ester, from the oil of *Kaempferia Galanga* (VAN ROMBURGH), A., i, 677.
- Methoxycoumarones**, 4- and 5- (STOERMER), A., i, 655.
- 3'-Methoxy-2:4'-diethoxy-flavanone and -flavone** (v. KOSTANECKI and SCHMIDT), A., i, 238.
- o-Methoxydiphenylcarbamide** (RANSOM), A., i, 219.
- 4'-Methoxy-6-ethoxyflavoneoxime** (v. KOSTANECKI), A., i, 449.
- Methoxyethylideneoxanilide** (v. PECHMANN and ANSEL), A., i, 389.
- 6-Methoxy-glauconic and -hydroglauconic acids** (DOEBNER), A., i, 313.
- p-Methoxyhydratropic acid**, synthesis of (BOUGAULT), A., 495, 548.
- 5-Methoxyhydrindene** (MOSCHNER), A., i, 344.
- Methoxymesityl oxide** (PAULY and LIECK), A., i, 275.
- 5-Methoxy-7-methyl-1:3-diketohydrindene-4-mono- and -2:4-dicarboxylic acids**, methyl esters (LANDAU), A., i, 661.
- Methoxy-3-methylisoquinolines**, 4- and 1-, 1- and 4-chloro- (GABRIEL and COLMAN), A., i, 359.
- Methoxynaphthalic anhydride** (ANSELM and ZUCKMAYER), A., i, 176.
- 3-Methoxyphenanthraquinone** (PSCHORR, WOLFES, and BUCKOW), A., i, 233.
- 4-Methoxyphenanthraquinone**, dibromo- (PSCHORR and JAECKEL), A., i, 489.
- Methoxyphenanthrenes**, 1- and 3-, synthesis of, and their 10-carboxylic acids (PSCHORR, WOLFES, and BUCKOW), A., i, 232.
- 4-Methoxyphenanthrene** and its dibromoderivative and 9-carboxylic acid (PSCHORR and JAECKEL), A., i, 488.
- β -o-Methoxyphenoxycinnamic acid** and its ethyl ester (RUHEMANN and STAPLETON), T., 1180; P., 1900, 168.
- o-Methoxyphenoxystyrene** (RUHEMANN and STAPLETON), T., 1181; P., 1900, 168.
- o-Methoxyphenylacetic acid** (PSCHORR, WOLFES, and BUCKOW), A., i, 232; (LEBEDEFF), A., i, 490.
- β -Methoxy- β -phenylacrylic acid** α -cyano-, ethyl ester (HALLER and BLANC), A., i, 496.
- p-Methoxyphenylcarbamide**, ethyl ester and **p-Methoxyphenylcarbimide** (VITTENER), A., i, 154.

- o*-Methoxyphenylcarbamide (RANSOM), A., i, 219.
- 3-*p*-Methoxyphenyl-2-carbostyryl (PSCHORR and WOLFES), A., i, 170.
- o*-Methoxyphenyl-*di*- and -*tri*-chloromethylcarbinols and their acetyl derivatives (LEBEDEFF), A., i, 490.
- α -*o*-Methoxyphenyl- β -*o*-nitroacetylvanillylacrylic acid, synthesis with (PSCHORR), A., i, 233.
- α -*o*- and -*p*-Methoxyphenyl-*o*-nitrocinamic acids, syntheses from (PSCHORR, WOLFES, and BUCKOW), A., i, 232.
- 3-*p*-Methoxyphenylquinoline, 2-amino- (PSCHORR and WOLFES), A., i, 170.
- o*-Methoxyphenylurethane (RANSOM), A., i, 219.
- 4-Methoxyisoquinoline, 1-chloro- (GABRIEL and COLMAN), A., i, 358.
- p*-Methoxystilbene, and its chloro-, bromo-, and nitro-derivatives (v. WALTHER and WETZLICH), A., i, 438.
- o*-Methoxystyrene, β -dichloro- (LEBEDEFF), A., i, 490.
- Methyl alcohol, boiling point of, with mixtures of benzene, carbon tetrachloride, ether, and ethyl alcohol (HAYWOOD), A., ii, 64.
detection of (JANDRIER), A., ii, 52.
detection of, in alcohols (WOLFF), A., ii, 111.
- Methylacetyl-quinol, and -resorcinol (STOERMER), A., i, 655.
- Methylacetyl-*p*-acetaminobenzoic acid (TROEGER), A., i, 227.
- Methylacetylcarbinol (HENRY), A., i, 538.
- Methylacetylmalononitrile (HENRY), A., i, 538.
- Methacrylic acids, α - and β -, ethyl esters, condensation of, with ethyl sodiocyanoacetate (HOWLES, THORPE, UDALL, and NEALE), T., 947; P., 1900, 115.
- Methyladipic acids, α - and β -. (MARKOWNIKOFF), A., i, 475.
- Methylal, heat of combustion and of formation of (BERTHELOT and DELÉPINE), A., ii, 334.
- Methylalizarin and its diacetyl derivative (v. NIEMENOWSKI), A., i, 450.
- Methylallantoins, α - and β -, from the methyluric acids (FISCHER and ACH), A., i, 65.
- Methylallylaniline, and the action of cyanogen bromide on (v. BRAUN), A., i, 642.
- Methylamine, spectrum of (HARTLEY and DOBBIE), T., 320; P., 1900, 14.
action of iodine chloride on (ORTON and BLACKMAN), T., 833; P., 1900, 103.
- Methylamine, hydrates of, heat of formation of (DE FOERCRAND), A., ii, 476.
cadmium haloids (RAGLAND), A., i, 141.
tellurium chloride (LENHER), A., i, 379.
tin haloids (COOK), A., i, 142.
- Methylaminoembelic acid (HEFFTER and FEUERSTEIN), A., i, 498.
- 3-Methylaminoflavinduline salts, 2-amino- (KEHRMANN and STOFFEL), A., i, 254.
- 7-Methylamino-4-methylcoumarin (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- Methylaminomethyl-2-piperidone (WILLSTÄTTER), A., i, 405.
- Methyl-*o*-aminophenol, oxidation products of (DIEPOLDER), A., i, 191.
- Methyl amyl diketoxime, diacetyl derivative of (PONZIO), A., i, 588.
- γ -Methyl- β -amylene and δ -Methyl- γ -amylene. See Hexylene.
- $\alpha\alpha$ -Methylisomamylsuccinic acid and its oxidation products (LAWRENCE), P., 1900, 156.
- $\alpha\alpha$ -Methylisomamylsuccinic acids, *cis*- and *trans*-, dissociation constants of (BONE and SPRANKLING), T., 1304; P., 1900, 184.
- Methylaniliminocarbaminothioglycollic acid (HARRIES and KLAMT), A., i, 413.
- Methylaniline, action of formaldehyde on (GOLDSCHMIDT), A., i, 436.
- Methyl-*o*-anisidine, oxidation products of (DIEPOLDER), A., i, 191.
- β -Methylanthracene from *p*-toluoyl-*o*-benzoic acid (LIMPRICHT and WIEGAND), A., i, 498.
- Methylanthranilic acid, methyl ester, in oil of mandarius (WALBAUM), A., i, 595.
- β -Methylanthraquinone from *p*-toluoyl-*o*-benzoic acid (LIMPRICHT and WIEGAND), A., i, 498.
- Methylation of colouring matters (PRUD'HOMME), A., i, 244.
and sulphonation, simultaneous, of colouring matters (PRUD'HOMME), A., i, 455.
- p*-Methylbenzaldazine, reduction of (CURTIUS), A., i, 611.
- 1-Methylbenzoxazole-4-carboxylic acid, ethyl ester (EINHORN), A., i, 441.
- p*-Methylbenzyl-hydrazine and -semicarbazide and their derivatives (CURTIUS), A., i, 612.
- p*-Methylbenzylhydrazine, nitroso- (CURTIUS), A., i, 699.
- p*-Methylbenzyl-*p*-methylbenzylidenehydrazine and its derivatives (CURTIUS), A., i, 611.

- 2-Methyl-2-bromopropanal.** See *iso*-Butaldehyde, α -bromo.
- Methyl-2-butanoic acid.** See *d*-Valeric acid.
- Methyl isobutenyl ketone.** See Mesityl oxide.
- Methyl-*n*-butylbenzenes,** *o*-, *m*-, and *p*-(*n*-butyltoluenes) (NIEMCZYCKI), A., i, 636.
- Methyl isobutyl diketoxime,** diacetyl derivative of (PONZIO), A., i, 588.
- 7-Methyl- β -butylene.** See Amylene.
- α -Methyl- α -isobutylglutaric acid,** and its oxidation, and α -cyano-derivative (LAWRENCE), P., 1900, 155.
- Methylisobutylglutaric acids,** *cis*- and *trans*-, and their anhydrides and anilic acids (LAWRENCE), P., 1900, 154.
- β -Methyl-*tert*-butylhydracrylic acid** and its salts (TALANZEFF), A., i, 328.
- 4-Methyl-6-butyl-1:2-phthalic acid** (BAUR-THURGAU), A., i, 640.
- α -Methyl- α -isobutylpropanetricarboxylic acid,** and its ethyl ester (LAWRENCE), P., 1900, 154.
- $\alpha\alpha$ -Methylisobutylsuccinic acids,** *cis*- and *trans*-, preparation and dissociation constants of (BONE and SPRANKLING), T., 1303; P., 1900, 184.
- Methylbutyric acid.** See Valeric acid.
- 2-Methylcamphenepyrrole** and its 3-acyl derivatives and **3-carboxylic acids** (DUDEN and TREFF), A., i, 672.
- 2-Methylcamphenepyrroline** and its 3-acyl derivative and **3-carboxylic acid** (DUDEN and TREFF), A., i, 672.
- Methylisocarbamide** (STIEGLITZ and MCKEE), A., i, 340, 431.
- Methylcarbazolenine** (PLANCHER), A., i, 562.
- 3-Methylisocarbostyryl** (GABRIEL and COLMAN), A., i, 359.
- Methylcarboxyresorcylic acid** (GILBODY, PERKIN, and YATES), P., 1900, 106.
- Methyl- α -chloroethylketonedietiethylsulphone** (POSNER and FAHRENHORST), A., i, 17.
- 2-Methylchromone** (BLOCH and v. KOSTANECKI), A., i, 502.
- 4-Methylcoumarin,** 7-amino-, and its acyl derivatives (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- 4-Methylcoumarin-7-trimethylammonium iodide** (v. PECHMANN), A., i, 173; (v. PECHMANN and SCHWARZ), A., i, 174.
- Methylcoumarones,** isomeric (STOERMER), A., i, 650.
- Methylcyanoacetic acid,** ethyl ester, constitution of the sodium derivative of (THORPE), T., 923; P., 1900, 113.
- Methylcyanoaniline** (SCHOLL and NÖRR), A., i, 435.
- Methylcytisine** (RAUWERDA), A., i, 607, 684.
- Methyldiallylcarbinol,** pentahydric alcohol from, and its acetyl derivatives (MAXIMOVITSCH), A., i, 325.
- Methyl-*m*-diazine.** See Methylpyrimidine.
- Methyl-diisobutyl- and -diamyl-sulphines,** platinichlorides of (STRÖMHOLM), A., i, 326.
- Methyldiethylsulphine iodide** (SMILES), T., 162; P., 1899, 240.
- 6-Methyldihydroquinaldine** (DOEBNER), A., i, 313.
- Methyldilituric acid,** and its salts, and bromo- and chloro- (ANDREASCH), A., i, 479.
- Methyl-1:1-dimethylpyrrolidinium haloids** (WILLSTÄTTER), A., i, 249.
- Methyldipropylsulphines,** platinichlorides of (STRÖMHOLM), A., i, 326.
- Methylene derivatives,** condensation of, with aromatic nitroso-compounds (SACHS), A., i, 362.
- iodide, action of mercury on (THOMAS), A., i, 213.
- sulphate (DELÉPINE), A., i, 130.
- action of, on benzyl alcohol (DELÉPINE), A., i, 163.
- dithiocarbonate, bromo- (KONOWALOFF and PLOTNIKOFF), A., i, 323.
- Methyleneasparagine** (SCHIFF), A., i, 85.
- Methylenebis-1-bromo- and -1-chloro-2-naphthylamine** (MORGAN), T., 814; P., 1900, 131.
- Methylenebisdihydroresorcinol, Methylenebis-mono- and -di-methyldihydroresorcinol, and Methylenebisphenyldihydroresorcinol** (VORLÄNDER and KALKOW), A., i, 99.
- Methylenebis-2-methylindole** and its nitro-derivatives (v. WALTHER and CLEMEN), A., i, 408.
- Methylenedibenzazimide** (*methylenebis-benzotriazole*) (MEYER and ROHMER), A., i, 223.
- Methylenedibenziminazole** and its salts (MEYER and ROHMER), A., i, 223.
- Methylenedi-2-ethyl- and -2-methylbenziminazole,** and their salts (MEYER and ROHMER), A., i, 223.
- 4-*mp*-Methylenedioxybenzylidenebis-1-phenyl-3-methyl-5-pyrazolone** (TAMBOR and LICIŃSKI), A., i, 364.
- Methyleneglutamine** (SCHIFF), A., i, 86.
- Methyleneglucose** and its osazone (TOLLENS), A., i, 15.
- Methylene-group,** method of entering the molecule of a polyhydric acid or alcohol (TOLLENS), A., i, 205.

- Methylenehomoasparagine** (SCHIFF), A., i, 86.
- m*- and *p*-**Methylenemalonic acids**, ethyl esters, preparation and distillation of (BOTTOMLEY and PERKIN), T., 306; P., 1900, 16.
- Methylenemalonic** and *p*-**Methylene-malonic acids**, ethyl esters, hydrolysis of (BOTTOMLEY and PERKIN), T., 306; P., 1900, 16.
- Methylene-*d*- and -*l*-mannonic lactones** (CLOWES and TOLLENS), A., i, 205.
- Methylenepapaverine** and its salts (KOENIGS), A., i, 190.
- Methylenetetraphenyldiquinoxaline** (MEYER and RÖHMER), A., i, 224.
- Methyl ethyl sulphide-mercuric iodide** (SMILES), T., 164; P., 1899, 240.
- Methylethylacetalysulphine** platinichloride (STRÖMHOLM), A., i, 326.
- Methylethylacetoxime**, chloro- (PATIEFF), A., i, 14.
- β*-**Methylethylacrylic acid**. See Hexenoic acid.
- Methylethyldesylsulphine** bromide and picrate (SMILES), T., 1175; P., 1900, 168.
- Methyl ethyl diketoxime**, diacetyl derivative of (PONZIO), A., i, 588.
- β*-**Methylethylhydracrylic acid** and its salts (POKROVSKY), A., i, 328.
- Methyl ethyl ketone** and its acetyl, chloro-, and bromo-derivatives (HENRY), A., i, 537.
- mutual solubility of water and, in presence of alcohol (BRUNI), A., ii, 196.
- d*- and -*l*-**Methylethylphenacylsulphine** *d*-bromocamphorsulphonates and picrates (SMILES), T., 1175; P., 1900, 168.
- i*-**Methylethylphenacylsulphine** bromide and picrate (SMILES), T., 1175; P., 1900, 168.
- Methylethylphenonaphthacridium** bromide, amino- ("aminomethylethyl-naphthacridium bromide"), and its acetyl derivative (ÜLLMANN and NAEF), A., i, 689.
- Methylethyl- α - and - β -propionothetines** salts (VANZETTI), A., i, 327.
- d*-**Methylethyl-*n*-propyl tin iodide** (POPE and PEACHEY), P., 1900, 42.
- d*-bromocamphorsulphonate (POPE and PEACHEY), P., 1900, 116.
- Methylethyl-propyl-, -butyl-, -amyl-, -hexyl-, and -octyl-sulphines** and their salts (STRÖMHOLM), A., i, 325.
- Methylethylthetine**, attempts to resolve (SMILES), T., 168; P., 1899, 240.
- resolution of, into active components (POPE and PEACHEY), T., 1072; P., 1900, 12.
- Methylethylthetine tartrate**, attempts to resolve (STRÖMHOLM), A., i, 326.
- d*-**Methylethylthetine** platinichloride, *d*-camphorsulphonate, and *d*-bromocamphorsulphonate (POPE and PEACHEY), T., 1072; P., 1900, 12.
- 4-Methyl-4-ethyltrimethylenedicarbonimide**, 3:5-dicyano- (dicyanohomocarbonimide), (GUARESCHI and GRANDE), A., i, 111.
- iso*-**Methyleugenol**, acid, C₁₄H₁₄O₄ from the oxidation of (BOUGAULT), A., i, 495.
- Methylfurfuraldehyde**, spectrum of (ANDRÉLÉ), A., i, 110; (WIDTSON and TOLLENS), A., i, 244.
- 1-Methylfurfuraldehyde-*p*-nitrophenylhydrazones** (FEIST), A., i, 569.
- Methyl furfuryl ketone** and its oxime (SANDELIN), A., i, 305.
- 6-Methyl-glauconic and -hydroglauconic acids** (DOEBNER), A., i, 313.
- Methylglutaric acids**, α - and β - (*butanedicarboxylic acids*) (HOWLES, THORPE, and UDALL), T., 947; P., 1900, 116.
- Methylglyoxal-*p*-ethoxyphenyl-hydrazoxime**, -osazone, and -osotetrazone (AUDEN), P., 1899, 230.
- Methylglyoxal-methylphenylphenyl-osazone** and -salicylic acid osazone (AUDEN), P., 1899, 231.
- β*-**Methyl- α -heptadienoic acid** (v. BRAUN and STECHELE), A., i, 429.
- Methyl-2-heptene-4-one-6**, and its mono- and di-semicarbazone (TIEMANN), A., i, 275.
- Methylcycloheptenoneoxime**, reactions of and bases from (WALLACH), A., i, 45.
- Methylcyclohexamethylene ketone** from pulegone (KONOWALOFF), A., i, 352.
- Methylcyclohexane** (*heptanaphthene*, *methyl-naphthene*, *hexahydrotoluene*), (KURSANOFF), A., i, 19.
- derivatives of (MARKOWNIKOFF and TSCHERDINTZEFF), A., i, 578; (MARKOWNIKOFF), A., i, 579.
- 3-bromoamino-, action of silver oxide on (KIJNER), A., i, 278.
- 3:3-dichloro- (KLAGES), A., i, 44.
- β*-**Methylhexane- γ -ol- ϵ -one**. See *iso*-Butyralacetone.
- 1:1-Methylcyclohexanol** (*tert.heptanaphthenol*) and its chloride (MARKOWNIKOFF and TSCHERDINTZEFF), A., i, 578.
- 1:3-Methylcyclohexanol** and its halogen derivatives (MARKOWNIKOFF), A., i, 579.
- and its bromide, physical constants of (KONDAKOFF and SCHINDELMEISER), A., i, 508.

- 1-Methyl-3-cyclohexanone** (KLAGES) A., i, 44; (WALLACH), A., i, 179.
physical constants of, and reduction of (KONDAKOFF and SCHINDELMEISER), A., i, 508.
oxidation of (MARKOWNIKOFF), A., i, 475.
- Methylcyclohexanoneoxime**, action of phosphoric oxide on (WALLACH), A., i, 45.
- Methylcyclohexanoneisooximes** and their separation and hydrolysis (WALLACH), A., 45, 590.
- 1-Methyl- $\Delta^{1,2}$ -cyclohexene** (*α -naphthylene*) (MARKOWNIKOFF and TSCHERDINTZEFF), A., i, 578.
- 1-Methyl- $\Delta^{2,3}$ -cyclohexene** (*β -naphthylene*) (MARKOWNIKOFF), A., i, 579.
- 1:3-Methylcyclohexenone** and **-hexylhydrazine** and its compound with phenylthiocarbimide (KLJNER), A., i, 278.
- 4-Methyl-4-hexyltrimethylenedicarbonimide**, 3:5-dicyano- (GUARESCHI and GRANDE), A., i, 112.
- 2-Methyl-3-hydroxyethylcamphane-pyrrolidine** and its isomeride (DUDEN and TREFF), A., i, 672.
- 2-Methyl-6:7-hystazarin** and its diacetyl derivative (v. NIEMENTOWSKI), A., i, 450.
- 1-Methylindene** (MARCKWALD), A., i, 434.
- 2-Methylindole** (*methylketole*), condensation of, with aldehydes, ethyl acetoacetate, and with phenylcarbimide, and the action of nitric acid on (v. WALTHER and CLEMEN), A., i, 408.
- 2-Methylindolephenyl-carbamide** and **-thiocarbamide** (v. WALTHER and CLEMEN), A., i, 408.
- Methylisurette** (BIDDLE), A., i, 137.
- Methyljapaconitine** and its aurichloride (DUNSTAN and READ), T., 54; P., 1899, 207.
- 2-Methyl-4-ketodihydroquinazoline**, synthesis of (BOBERT and GOTTHELF), A., i, 412, 608.
- 1-Methyl-2-ketohexamethylenecarboxylic acid**, ethyl ester (DIECKMANN), A., i, 624.
- Methylketole**. See 2-Methylindole.
- Methylketopentamethylenecarboxylic acid**. See Methylcyclopentanonecarboxylic acid.
- Methylmalonic acid** (*isosuccinic acid*; *ethanedicarboxylic acid*), sodium derivative of the ethyl ester, condensation of, with mesityl oxide (CROSSLEY), P., 1900, 90.
- Methylmorphimethine**, decomposition product of (PARTHEL and GROOVER), A., i, 516.
- isoMethylmorphol**. See 3-Hydroxy-4-methoxyphenanthrene.
- α - and β -Methylnaphthalenes** from naphtha tar (LJUBAVIN), A., i, 23.
- Methylnaphthetetrazole** (MARCKWALD and CHAIN), A., i, 521.
- Methylnaphthatriazolyl mercaptan** (MARCKWALD and CHAIN), A., i, 521.
- Methylnaphthene**. See Methylcyclohexane.
- 2-Methyl- α -naphthiminazole**, amino-, and its sulphonic acid and diazo-compound, and hydroxysulphonic acid (GALLINEK), A., i, 697.
- Methylnitramine**, physiological action of, in relation to its constitution (SPRUYT), A., i, 142.
- Methyloctadienonol**, its acetate and isomeride (LÉSER), A., i, 129.
- o*-Methylolbenzoic hydrazide** and its benzylidene derivative (WEDEL), A., i, 363.
- Methyloldeoxy-cinchonine** and **-conchinine** and their platinichlorides (KOENIGS), A., i, 190.
- Methylol-5-methyl- and -5-ethyl-acridine** (KOENIGS), A., i, 190.
- Methyloxaluric acid** (BEHREND and DIETRICH), A., i, 120.
- 1-Methylcyclopentanone**, its oxime, semicarbazone, and benzoyl derivative (BOUVEAULT), A., i, 171.
- 1-Methyl-2-cyclopentanone-1-carboxylic acid**, ethyl ester (BOUVEAULT), A., i, 171.
- 4-Methyl-2-cyclopentanone-1-carboxylic acid**, ethyl ester, and nitroso-compounds from (DIECKMANN and GROENEVELD), A., i, 297.
- Methylcyclopentanoneoxime**, action of phosphoric oxide on (WALLACH), A., i, 45.
- β -Methylcyclopentanoneisooxime** and its hydrolysis (WALLACH), A., i, 589.
- Methylpentosans**, spectrum of (WIDTSE and TOLLENS), A., i, 244.
- Methylpentose**, isolation of, from urine (BERGELL and BLUMENTHAL), A., ii, 373.
- Methylpentoses** (SULEIMAN BEY), A., i, 377.
- Methylphenomorpholine**, colour test for (KOBERT), A., ii, 121.
- Methylphenomorpholone** (BISCHOFF), A., i, 345, 442.
- Methylphenonaphthacridine** ("*methyl-naphthacridine*"), and its dihydro-compound and their amino-derivatives and salts, syntheses of (ULLMANN and NAEF), A., i, 360, 361, 689.
- 5-Methylphenoxazine-2:3-quinone** and its oxime (DIEFOLDER), A., i, 191.

- 2-Methyl-1:3:4:5-phentetrol**, derivatives of (KONYA), A., i, 545.
- m*-**Methylphenylethylamine** and its benzoyl derivative (SOMMER), A., i, 388.
- 2-*m*-Methylphenylethylidihydroisindole** (SOMMER), A., i, 389.
- Methylphloroglucinol**, action of nitrons acid on, and its oximes (WEIDEL and POLLAK), A., i, 291.
- amino-derivatives of (FRIEDL), A., i, 593.
- di*bromo-, and its triacetyl derivatives (HERZIG, POLLAK, and ROHM), A., i, 595.
- Methylpicramide** and nitroso-, and their additive products (BAMBERGER and MÜLLER), A., i, 217.
- Methylisopilocarpine** and its salts (JOWETT), T., 853; P., 1900, 125.
- Methylpiperazine**, preparation of (ESCH and MARCKWALD), A., i, 336.
- Methylpiperidine**, action of cyanogen bromide on (V. BRAUN), A., i, 687.
- 1-Methylpiperidine**, abnormal aurichloride of (FENNER and TAFEL), A., i, 111.
- Methylisopropylaniline**, and the action of cyanogen bromide on (V. BRAUN), A., i, 642.
- 1:4-Methylisopropylbenzene**. See Cymene.
- Methylpropylbutylsulphines**, platini-chlorides of (STRÖMHOLM), A., i, 326.
- α*-**Methyl-*p*-isopropylcinnamic acid** (GRIGOROWITSCH), A., i, 598.
- Methylisopropylcoumarones**, 3:6- and 6:3- (STOERMER), A., i, 653.
- Methyl propyl diketoxime**, diacetyl derivative of (PONZIO), A., i, 588.
- α*-**Methyl-8-isopropylglutaric acids** (*heptanedicarboxylic acids*) (HOWLES, THORPE, and UDALL), T., 946; P., 1900, 115.
- ββ*-**Methyl-*n*- and -*iso*-propylglutaramides**. See 2:6-Dioxy-4-methyl-4-*n*- and -*iso*-propylpiperidines.
- 3-Methyl-2-isopropylindole**, action of methyl iodide on (PLANCHER), A., i, 561.
- Methyl propyl ketone**, action of *iso*amyl nitrite and alcoholic hydrogen chloride on (KISSEL), A., i, 621.
- Methylisopropylquinoxaline** (PAULY and LIECK), A., i, 275.
- αα*-**Methylpropylsuccinic acids**, *cis*- and *trans*-, preparation and dissociation constants of (BONE and SPRANKLING), T., 1302; P., 1900, 184.
- 4-Methyl-4-*n*- and -*iso*-propyltrimethylenedicarbonimides**, 3:5-*dicyano*- (MINOZZI), A., i, 407.
- 1-Methyl-1-propyltrimethylenedicarboxylic acid**, 2:3-*dicyano*- (MINOZZI), A., i, 407.
- 3-Methylpyrazole-1-*p*-benzoic acid**. See 1-Phenyl-3-methylpyrazole-Bz-*p*-carboxylic acid.
- 2-Methylpyridine-6-carboxylic acid** and its salts (LADENBURG and SCHOLTZE; PINNER; PINNER and LEWIN), A., i, 409.
- Methylpyridiniumhydroxide** (HANTZSCH and KALB), A., i, 113.
- 4-Methylpyrimidine** (4-*methyl-m-diazine*), 2- and 6-amino-, 6-chloro-, 2:6- and 6:2-chloroamino- and 6-iodo- (GABRIEL and COLMAN), A., i, 54.
- disulphide (GABRIEL and COLMAN), A., i, 55.
- 4-Methylpyrimidine-2:6-dithiol**, **4-Methylpyrimidine-2 thiol**, 6-amino-, and **4-Methylpyrimidine-6 thiol** and 2-amino-, and its benzoyl derivatives (GABRIEL and COLMAN), A., i, 54.
- 1-Methylpyrrolidine-2-mono- and -2:2-di-carboxylic acids** (WILLSTÄTTER), A., i, 405.
- 2-Methyl-5:8-quinizarin** and its diacetyl derivative (V. NIEMENTOWSKI), A., i, 450.
- 3-Methylisoquinoline** and its tetrahydride (GABRIEL and COLMAN), A., i, 359.
- Methyl-quinolinium and -isoquinolinium hydroxides** (HANTZSCH and KALB), A., i, 113.
- Methylresorcinolacetic acid** (GILBODY, PERKIN, and YATES), P., 1900, 106.
- Methylstrophanthobioside** (FEIST), A., i, 540, 555.
- 4-Methylstyrene**, *αβ*-*di*- and *αβ*:3-*tri*-chloro- (KUNCKELL and GOTSCH), A., i, 639.
- Methylsuccinic acid** (*i*-*pyrotartaric acid*, *citr**apyrotartaric acid*, *propanedicarboxylic acid*), methylamides of (MEERBURG), A., i, 143.
- i*-sodium and potassium salts (SCHLOSSBERG), A., i, 376.
- d*-*N*-**Methyltetrahydropapaverine**. See Laudanosine.
- r*-*N*-**Methyltetrahydropapaverine** (PICKET and ATHANASESCU), A., i, 685.
- α*-**Methyltetronic acid**, action of diazobenzene chloride on (WOLFF and HEROLD), A., i, 585.
- N*-**Methyltriphenazineoxazine** and its phenylazonium base (DIEFOLDER), A., i, 192.
- Methyluracil**, imino- (GABRIEL and COLMAN), A., i, 54.
- Methyluracilcarboxylic acid**, nitro- (BEHREND and DIETRICH), A., i, 121.

- 4-Methyluric acid** (BEHREND and DIETRICH), A., i, 120; (BEHREND), A., i, 287.
- 5-Methyluric acid** and its salts and oxidation (FISCHER and ACH), A., i, 63.
- γ-Methylvaleric acid.** See *isoHexoic acid*.
- Methylvinylidenexanilide** (V. PECHMANN and ANSEL), A., i, 287.
- Methylvioluric acid** and its salts (ANDREASCH), A., i, 479.
- 4-Methylxanthine**, decomposition of, in the organism (KRÜGER and SCHMIDT), A., ii, 31.
- Methylxanthines**, 1- and 4-, physiological action of (ALBANESE), A., ii, 424.
- Mica** from Oulx, Piedmont (COLOMBA), A., ii, 217.
- Microcline** from Japan (JIMBÔ), A., ii, 88.
- Micro-organism** from soil (STUTZER and HARTLEB), A., ii, 97.
- Microtonalite** from Cape Marsa (DUPARC and PEARCE), A., ii, 219.
- Migration constant.** See *Electrochemistry*.
- Milk**, human, caseinogen of (KOBRAK), A., ii, 420.
 urea in (SCHÖNDORFF), A., ii, 556.
 influence of alcohol on the formation of (ROSEMAN), A., ii, 225.
 Umikoff's reaction with (SIEBER), A., ii, 696.
 human and cows', comparison of the feeding of infants on (MÜLLER), A., ii, 422.
 acidity of (TOURCHOT), A., ii, 582.
 variation in total solids of (REINSCH and LÜHRIG), A., ii, 771.
 analysis of (GALLIEN), A., ii, 324; (RICHMOND), A., ii, 696.
 detection of adulteration of (TIMPE), A., ii, 251.
 detection of alkali chromates in (LEYS), A., ii, 110.
 detection of foreign colouring matters in (LEACH), A., ii, 451.
 detection of nitric acid in (UTZ), A., ii, 438.
 deceptive reactions in testing for preservatives in (AMTHOR), A., ii, 453.
 detection of salicylic acid in (SÜSS), A., ii, 770.
 detection of sodium carbonate in (SÜSS), A., ii, 759.
 simultaneous estimation of ash, fat, and residue in (TIMPE), A., ii, 179.
 estimation of fat in (TIMPE), A., ii, 179; (GALLIEN; MORINI; LÉZÉ), A., ii, 324; (RICHMOND), A., ii, 696.
- Milk**, estimation of fat in condensed (LEACH), A., ii, 771.
 estimation of fat in sweetened condensed (GEISLER), A., ii, 771.
 estimation of fat in sweetened condensed, by the Babcock test (FARRINGTON), A., ii, 771.
 apparatus for the estimation of fat in (PENNY), A., ii, 770.
 modification of Duclaux's method for estimating total solids and fat in (MORINI), A., ii, 324.
 estimation of lactose in (GALLIEN), A., ii, 324.
 estimation of sucrose in condensed (GRÜNHUT and RIEBER), A., ii, 249.
 See also *Agricultural Chemistry*.
- Milk-fat**, estimation of, in dairy produce (LINDET), A., ii, 451.
- Milk-sugar.** See *Lactose*.
- Mineral**, new, of the columbite group (GOODWIN and MILLER), A., ii, 662.
 new, from near Cassel (BLANKENHORN), A., ii, 736.
- Minerals**, colours of (NABL), A., ii, 661.
 containing thorium and uranium, photographic action of (AFANAS-SEEFF), A., ii, 702.
 action of ammonium chloride on (CLARKE and STEIGER), A., ii, 24, 219, 414.
 from the Bogoslawsk district, Urals (v. FEDOROFF and NIKITIN), A., ii, 486.
 from the Langesund Fjord, composition of (SJÖGREN), A., ii, 734.
 Moravian, composition of (KOVÁŘ), A., ii, 147, 148, 149.
 from Narsarsuk, S. Greenland (FLINK), A., ii, 410.
 in the anhydrite and gypsum deposits at Oulx, Piedmont (COLOMBA), A., ii, 216.
 from the Radauthal, Harz (FROMME), A., ii, 487.
 Scottish, genesis of some (GOODCHILD), A., ii, 733.
 from the eruptive rocks of Suzeava (BUTUREANU), A., ii, 149.
 in the pegmatites of the Upper Veltlin (LINCK), A., ii, 286.
- Minerals**, new. See:—
 Ancylite.
 Angolite.
 Britholite.
 Chalcolamprite.
 Cordylite.
 Endeolite.
 Epistolite.
 Fedorowite.
 Florencite.
 Glaucochroite.

- Minerals**, new. See :—
 Graftonite.
 Hancockite.
 Johnstonotite.
 Lasur-oligoclase.
 Leucophœnicite.
 Leucosphenite.
 Libollite.
 Lorenzenite.
 Marsjatskite.
 Melite.
 Müllerite.
 Muschketowite.
 Narsarsukite.
 Nasonite.
 Schizolite.
 Spodiophyllite.
 Stokesite.
 Sulvanite.
 Tainiolite.
 Von-Diestite.
- Mineral analysis**, new methods of (CARNOT), A., ii, 572.
 interpretation of (PENFIELD), A., ii, 602.
 substitutes for hydrochloric acid in testing for carbonates in (RICHARDS and POWELL), A., ii, 440.
- Mineral oils**. See Petroleum.
- Mineral waters**. See Water.
- Minium**. See Triplumbic tetroxide under Lead.
- Mixtures**, refraction of (PERKIN), T., 280 ; P., 1899, 237.
 thermal conductivities of, and of their constituents (LEES), A., ii, 333.
- Modulus law** (PONSOT), A., ii, 392.
- Molasses**. See Agricultural Chemistry.
- Molecular mass** of sulphuric acid (LINEBARGER), A., ii, 273.
- Molecular susceptibility** of the paramagnetic salts of the iron group (DU BOIS and LIEBKNECHT), A., ii, 128 ; (LIEBKNECHT and WILLS), A., ii, 187.
 of salts of the rare earths (MEYER), A., ii, 7, 186 ; (DU BOIS and LIEBKNECHT), A., ii, 127, 333.
- Molecular volume**. See Volume.
- Molecular weights**. See Weights.
- Molluscs**, acephalous, the crystalline stalk of (COUPIN), A., ii, 420.
- Molybdenum** in plants (DEMARÇAY), A., ii, 235.
 preparation of (ROGERS and MITCHELL), A., ii, 597.
 preparation of, by the aid of liquid air (STAVENHAGEN), A., ii, 80.
- Molybdenum alloys**, analysis of (BORN-TRÄGER), A., ii, 444.
- Molybdenum dioxide** (GUICHARD), A., ii, 80.
- Molybdenum**, blue oxide of (ROGERS and MITCHELL), A., ii, 597 ; (GUICHARD), A., ii, 658.
 silicide (VIGOUROUX), A., ii, 144.
 disulphide (GUICHARD), A., ii, 144.
 sesquisulphide, Mo_2S_3 (GUICHARD), A., ii, 211.
 sulphides, analysis of (GUICHARD), A., ii, 370.
- Permanganomolybdates** (FRIEDHEIM and SAMELSON), A., ii, 547.
- Vanadiomolybdates** and **Silicovanadiomolybdates** (FRIEDHEIM and CASTENDYCK), A., ii, 483.
- Molybdenum, estimation and separation of** :—
 estimation of, in iron (DÖHLER), A., ii, 691.
 estimation of, in steel and steel-making alloys (IBBOTSON and BREARLEY), A., ii, 766.
 separation of, from tungsten (IBBOTSON and BREARLEY), A., ii, 445.
- Monkeys**, effect of thyroid feeding on (EDMUNDS), A., ii, 224.
- Morphenol** (VONGERICHTEN), A., i, 248.
- Morphide**, chloro-, and bromo-, and their hydrochlorides and hydrobromides (SCHRYVER and LEES), T., 1024 ; P., 1900, 143.
- Morphine**, non-nitrogenous decomposition products of (VONGERICHTEN), A., i, 248.
 and its derivatives, physiological action of (WINTERNITZ), A., ii, 221, 489 ; (IMPENS), A., ii, 228.
 derivatives, Ehrlich's diazo-reaction for the recognition of some (CARCANO), A., ii, 776.
 benzyl ether (*peronine*) and ethyl ether (*dionine*), colour tests for (KOBERT), A., ii, 121.
 colour test for (KOBERT), A., ii, 121.
 estimation of, in organs (RUSSWURM), A., ii, 121.
- iso***Morphine** and its hydrochloride, hydrobromide and methiodide (SCHRYVER and LEES), T., 1024 ; P., 1900, 143.
 methiodide, action of silver sulphate and barium hydroxide on (SCHRYVER and LEES), T., 1024 ; P., 1900, 143.
- Morphol** (3:4-dihydroxyphenanthrene) (VONGERICHTEN), A., i, 248.
- Mortars**, change of volume of, during hydration (LE CHATELIER), A., ii, 140.
- Moss-berry** of Finland (STOLLE), A., ii, 614.
- Mosses**, chemistry of the cell membranes of (CZAPEK), A., i, 556.

Mould, chemical action of, on butter (HANUŠ and STOCKÝ), A., ii, 772.

Moulds, replacement of potassium salts by rubidium salts in the growth of (LOEW), A., ii, 36.

influence of light on the respiration of (KOLKWITZ), A., ii, 361.

action of, on arsenic and its compounds (ABEL and BUTTENBERG), A., ii, 299.

resolution of racemic compounds by means of (ULPIANI and CONDELLI), A., ii, 493.

Mucic acid, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.

Mucin (LEVENE), A., i, 317.

from bone (GIES), A., i, 317.

physiological action of (LEVIN), A., ii, 295, 555.

ψ-**Mucin** from ovarian cysts (ZÄNGERLE), A., ii, 675.

Mucor Rouxii from "Chinese yeast" (WEHMER), A., ii, 743.

Müllerite from Nontron, France (ZAMBONINI), A., ii, 149.

Mulberry trees. See Agricultural Chemistry.

Muschketowite from Bogoslawsk, Urals (v. FEDOROFF and NIKITIN), A., ii, 486.

Muscle, phosphorus in (MACLEOD), A., ii, 92.

extractives of (SIEGFRIED), A., i, 127.

action of phloridzin on (LEE and HARROLD), A., ii, 558.

action of the veratrine alkaloids on (WALLER), A., ii, 425.

separation of connective tissue from (GOODMAN), A., ii, 671.

eye, effect of poisons on (GUILLERY), A., ii, 95.

heart, fat of normal and degenerated (LINDEMANN), A., ii, 32.

ventricular, action of certain ions on (LINGLE), A., ii, 739.

"surviving," action of the constant current on the respiration of (GUILLOZ), A., ii, 221.

Mustard oil from rape-cake, development and injurious effect of; and estimation of (SJOLEMA), A., ii, 613.

Myrica Gale, constituents of (PERKIN), T., 429; P., 1900, 45.

Myricetin from various tannin matters (PERKIN), T., 423; P., 1900, 45.

Myrosin, occurrence of, in plants (BOKORNY), A., ii, 746.

N.

Naphtha, Grosny, composition of (CHARITSCHKOFF), A., ii, 147.

estimation of sulphur in (LIDOFF), A., ii, 107.

Naphtha tar, constituents of (LJUBAVIN), A., i, 23.

Naphthafurans, α- and β-, bromo- and chloro-derivatives (STOERMER), A., i, 654.

β-Naphthahydrofuran, 1:2-dichloro- (STOERMER), A., i, 654.

1:2-Naphtha-β-ketopentamethylene-azine and its carboxylic and 4-sulphonic acids (THOMAS-MAMERT and WEIL), A., i, 459.

Naphthalene, vapour pressure of (ALLEN), T., 400; P., 1899, 122.

vapour in coal gas (ALLEN), A., i, 339.

derivatives, isomeric, the number of (REY), A., i, 482; (KAUFFMANN), A., i, 544.

displacement of sulphonic groups in, by nascent chlorine (VAUBEL), A., i, 544.

estimation of, in coal gas (COLMAN and SMITH), A., ii, 372.

Naphthalene, 2-chloro-, electrolytic preparation of (VOTOČEK and ZENŠEK), A., i, 19.

1-iodoso-, and its reactions and salts (WILLGERODT and SCHLÖSSER), A., i, 282; (ORTOLEVA), A., i, 592.

1-iodoxy- (ORTOLEVA), A., i, 592.

1:5- and 1:8-dinitro-, conversion of, into nitronitrosenaphthols (GRAEBE), A., i, 24; (FRIEDLÄNDER), A., i, 150.

1:5- and 1:8-dinitro-, and 1:3:8-trinitro- (FRIEDLÄNDER), A., i, 150.

β-Naphthalenecarboxylic acid, ethyl ester, chloroimide of (STIEGLITZ and SLOSSON), P., 1900, 2.

1:8-Naphthalenedicarboxylic acid. See Naphthalic acid.

Naphthalene-1:3:5-trisulphonic acid (ERDMANN), A., i, 91.

Naphthalic acid (1:8-naphthalenedicarboxylic acid), preparation of (ANSELM and ZUCKMAYER), A., i, 175; (JAUBERT), A., i, 296.

sulphonic derivative and anhydride of, and their salts (ANSELM and ZUCKMAYER), A., i, 175.

αβ-Naphthanthracene, constitution of (GABRIEL and COLMAN), A., i, 232.

αβ-Naphthanthraquinone, constitution of (GABRIEL and COLMAN), A., i, 232.

Naphthaphenazine, 9-amino- (KEHRMANN and WOLFF), A., i, 450.

- Naphthapurpurin** (1:2:4-*trihydroxy- α -naphthaquinone*), from naphthazarin (JAUBERT), A., i, 42.
- α -Naphthaquinone**, action of nitrogen trioxide on (SCHMIDT), A., i, 299.
5-amino- (FRIEDLÄNDER), A., i, 150.
dibromo-, malonic acid derivatives of (LIEBERMANN), A., i, 310.
- β -Naphthaquinone**, 3:2-chlorobromo- (HIRSCH), A., i, 670.
- α -Naphthaquinoneacetacetic acid**, bromo-, ethyl ester, action of alcoholic potash on, and condensation of, with ethylamine (LIEBERMANN), A., i, 311.
- α -Naphthaquinone-3-acetoacetic, -3-benzoylacetic, and -3-oxalacetic acids**, 2-chloro-, ethyl esters (MICHEL), A., i, 669.
- β -Naphthaquinone-4-acetoacetic, -4-benzoylacetic, -4-malonic, and -4-oxalacetic acids**, 3-chloro-, esters of (HIRSCH), A., i, 670.
- β -Naphthaquinone-4-acetylacetone**, 3-chloro- and 3-bromo- (HIRSCH), A., i, 671.
- α -Naphthaquinone-3-acetylacetone, -3-benzoylacetone, and -3-dihydroresorcinol**, 2-chloro- (MICHEL), A., i, 669.
- β -Naphthaquinone-4-benzoylacetone, and -4-deoxybenzoin**, 3-chloro- (HIRSCH), A., i, 671.
- α -Naphthaquinone-benzoylphenylhydrazine, -phenylbenzylhydrazine, and -phenylmethylhydrazine** (McPHERSON), A., i, 124.
- β -Naphthaquinone-benzoylphenylhydrazine, and -phenylmethylhydrazine** (McPHERSON), A., i, 124.
- α -Naphthaquinonebis-1-phenyl-3-methylpyrazolone** (MICHEL), A., i, 670.
- α -Naphthaquinone-dimalonic acid and -isindonedicarboxylic acid**, ethyl esters (LIEBERMANN), A., i, 311.
- Naphthaquinone-3-ethylacetamide, bromo-** (LIEBERMANN), A., i, 310.
- Naphthaquinoxalinediacetic acids** 1:2- and 2:3-, and their ethyl esters (THOMAS-MAMERT and WEIL), A., i, 459.
- Naphthatriazole** and its salts, and **Naphthetetrazole** (MARCKWALD and MEYER), A., i, 520.
- Naphthatriazolyl mercaptan** (MARCKWALD and MEYER), A., i, 520.
- Naphthazarin** (*dihydroxy- β -naphthaquinone*), diacetyl derivative of (THIELE and WINTER), A., i, 505.
- 1:2-Naphthazine-6:6'-disulphonic acid**, sodium salt (MEIGEN and NORMANN), A., i, 702.
- 1-Naphthol**, 4:5- and 4:8-dinitro- (FRIEDLÄNDER), A., i, 150.
5:4- and 8:4-nitronitroso-, and two isomeric trinitro- (GRAEBE), A., i, 24; (FRIEDLÄNDER), A., i, 150.
- β -Naphthol derivatives**, etherification of (DAVIS), T., 33; P., 1899, 210.
 α -nitroso- (MÖHLAU and STROHBACH), A., i, 368.
- Naphthols**, α - and β -, condensation of, with ethyl phenylpropionate (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- Naphthol-K-acid**, amino-. See 8-Hydroxynaphthalene-4:6-disulphonic acid, 1-amino-.
- α -Naphtholcarboxylic acid**, methylester, nitro- and amino- (EINHORN), A., i, 441.
- α -Naphthol-2-carboxy-3-malonic acid**, ethyl ester (NEF), A., i, 23.
- β -Naphthoxyacetone** and its oxime, phenylhydrazine and semicarbazone (STOERMER), A., i, 653.
- β -Naphthoxycinnamic acids**, α - and β - (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- Naphthoxypropionic, -n- and -isobutyric, and -isovaleric acids**, α - and β -, and their ethyl esters (BISCHOFF), A., i, 395.
- α -Naphthoyl o-benzoic acid**, constitution of (GABRIEL and COLMAN), A., i, 232.
- Naphthoylbromo-ethyl- and -propylamides**, α - and β - (SAULMANN), A., i, 687.
- 1-Naphthyl iodochloride** and its reactions (WILLGERODT and SCHLÖSSER), A., i, 282.
- β -Naphthyl mercaptan** (BOURGEOIS), A., i, 163.
- β -Naphthyl methyl, ethyl, and propyl ethers** and their halogen derivatives (DAVIS), T., 36; P., 1899, 210.
- 1-Naphthylamine**, 4-chloro- (REVERDIN and CRÉPIEU), A., i, 288.
- β -Naphthylamine derivatives**, action of aromatic aldehydes on (MORGAN), T., 1210; P., 1900, 171.
- Naphthylamines**, action of formaldehyde on (MORGAN), T., 814; P., 1900, 131.
- Naphthylcamphoformeneaminocarboxylic acids**, α - and β - (J. B. and A. TINGLE), A., i, 302.
- α - and β -Naphthylcarbamic acids**, ethyl esters, and α - and β -Naphthylcarbimide (VITTENET), A., i, 154.
- Naphthylene**. See Methylcyclohexene.
- Naphthylene-o-diamines**, condensation of, with ethyl cetipate (THOMAS-MAMERT and WEIL), A., i, 459.

- Naphthylhydrazidoxalhydroxamic acids**, α - and β -, and their derivatives (THIELE and PICKARD), A., i, 30.
- β -Naphthyliminoethyl ether**, rearrangement of (WHEELER and ATWATER), A., i, 294.
- 2- α -Naphthyl-5-methylthiazoline** (SAULMANN), A., i, 687.
- Naphthylnitrosoamine** (ENGLER), A., i, 568.
- Naphthylloxazolines**, 2- α - and β -, and their 5-methyl derivatives and their salts (SAULMANN), A., i, 687.
- Naphthylloxides**, sodium, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 395.
- Naphthylpenthiazolines**, 2- α - and β - (SAULMANN), A., i, 687.
- α -Naphthyl-*m*- and *p*-phenylenediamines** (MERZ and STRASSER), A., i, 253.
- Naphthylthiazolines**, 2- α - and β -, and their salts (SAULMANN), A., i, 687.
- Naphthylthiosulphonacetoacetic acids**, α - and β -, ethyl esters (TROEGER and EWERS), A., i, 495.
- Narceine** and its hydrates, hydrochloride and potassium derivative, thermochemistry of (LEROY), A., ii, 131.
- Narcotics**, anæsthetising action of (MEYER; BAUM), A., ii, 156.
- Narcotine methiodide**, action of silver chloride on (ROSER), A., i, 51.
- Narsarsukite** from Greenland (FLINK), A., ii, 412.
- Nascent state**, influence of, on the combination of oxygen and carbon monoxide (RUSSELL), T., 361; P., 1900, 42.
- Nasonite** from New Jersey (PENFIELD and WARREN), A., ii, 89.
- Nasturtium officinale***, constituents of (GADAMER), A., i, 49.
- Natrolite**, action of ammonium chloride on (CLARKE and STEIGER), A., ii, 414.
- Neobornylamine**, separation of, from bornylamine, rotatory power of, and action of ethyl oxalate on (FORSTER and HART-SMITH), T., 1152; P., 1900, 166.
- Neodymium**, spectra of (MUTHMANN and STÜTZEL), A., ii, 18.
carbide, preparation and properties of (MOISSAN), A., ii, 726.
- Nephritis**, excretion of alloxuric substances in (MARTIN), A., ii, 155.
- Nepodin** (HESSE), A., i, 41.
- Neroli oil** (*orange blossom oil*) (JEANCARD and SATIE), A., i, 511; (E. and H. ERDMANN), A., i, 555.
- Nerves**, properties of, under the influence of certain poisons (WEDENSKI), A., ii, 739.
- Nerves**, action of the veratrine alkaloids on (WALLER), A., ii, 425.
- Nerve tissues**, action of the tetanus toxin on (DANYSZ), A., ii, 156.
physiological effects of extracts of (HALLIBURTON; OSBORNE and VINCENT), A., ii, 423.
- Nervous system** of the growing rat, decrease of water in the (DONALDSON), A., ii, 556.
- "New methylene-blue,"** acyl derivative of (COHN), A., i, 455.
- Nickel**, occurrence of, in Silesia (ASCHERMANN), A., ii, 86.
electrolytic deposition of, polarisation in the (MARSHALL), A., ii, 185.
passivity of (HITTOFF), A., ii, 706.
specific heat of (TILDEN), A., ii, 524.
occlusion of hydrogen by (BAXTER), A., ii, 79.
- Nickel alloys** with iron, allotropic transformations of (DUMAS), A., ii, 408.
- Nickel arsenide** (GRANGER and DIDIER), A., ii, 349.
azoinide (CURTIUS and DARAPSKY), A., ii, 474.
borate (OUVRARD), A., ii, 207.
carbonyl, decomposition of, in solution (LENER and LOOS), A., ii, 349.
fluoride, double salts with aluminium or ferric fluoride (WEINLAND and KÖPPEN), A., ii, 143.
phosphide, preparation of (MARONEAU), A., ii, 281.
selenides (FONZES-DIACON), A., ii, 730.
sulphate, supposed decomposition of, by light (DOBROSERDOFF), A., ii, 658.
combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1247; P., 1900, 173.
hydroxylamine compound of, crystalline form of (UHLENHUTH), A., ii, 482.
potassium sulphate (MALLET), T., 221; P., 1899, 227.
- Nickel organic compounds**:—
ethylenediamine compounds of (KURNAKOFF), A., i, 209.
- Nickel, estimation and separation of**:—
estimation of, in nickel ores (LANGMUIR), A., ii, 316.
estimation of, in nickel-steel (SARGENT), A., ii, 51.
estimation of, colorimetrically, in nickel-steel (FIEBER), A., ii, 628.
separation of, from cobalt, by the action of ammonium hydroxide on the ferricyanides (BROWNING and HARTWELL), A., ii, 765.

Nickel, estimation and separation of:—
separation of, from cobalt, by means of persulphates (MAWROW), A., ii, 596, 765.

separation of, from cobalt, by means of their sulphides (TOWER), A., ii, 690.

Nickel-steel, thermo-electrical properties of (STEINMANN), A., ii, 523, 524.

estimation of nickel in (SARGENT), A., ii, 51.

estimation of nickel in, colorimetrically (FIEBER), A., ii, 628.

Nicotine, action of, on circulation and respiration (WINTERBERG), A., ii, 424.

detection of (SCHINDELMEISER), A., ii, 380.

estimation of, in tobaccos (HARKER), A., ii, 778.

estimation of, in cigars and tobacco smoke (THOMS), A., ii, 428.

i-**Nicotine** (PICTET and ROTSCHEY), A., i, 685.

reduction of nicotyrine to (PICTET), A., i, 685.

*iso***Nicotinic acid** (4-pyridinecarboxylic acid), preparation and derivatives of (TERNÁJGÓ), A., i, 559.

2:6-diiodo- (SELL and DOOTSON), T., 235; P., 1900, 9.

Nitragin. See Agricultural Chemistry.

Nitramines, formation of, from amine nitrates (BAMBERGER and HOFF), A., i, 435.

Nitrates. See under Nitrogen and also Agricultural Chemistry.

Nitric acid, oxide and peroxide. See under Nitrogen.

Nitrification. See Agricultural Chemistry.

Nitriles, additive compounds of, with tripyridinechromium trichloride (PFEIFFER), A., i, 688.

physiological action of (FIQUET), A., ii, 424.

Nitriles. See also:—

Acetonitrile.

α -Acetylpropionitrile.

Acetylxydonitrile.

Benzonitrile.

Benzylsulphide-*p*-dicarboxylic acid, nitrile of.

Camphoeceonitrile.

Cinnamonitriles.

Crotononitrile.

p-Cyantoline.

Dihydrocampholenitrile.

Diindonemalononitrile.

Dimethylacetylacetonitrile.

$\alpha\beta$ -Dimethylglutolactonic acid, nitriles of.

Nitriles. See:—

Ethoxybenzonitrile.

β -Furfuryl- α -*p*-chloro phenylacrylonitrile.

Glycollonitrile.

Hydroxybenzonitrile.

p-Hydroxymesitylenonitrile.

Methoxybenzonitrile.

Methylacetylmalononitrile.

Phenylacetoneitrile.

α -Phenylisobutyronitrile.

Phenylcinnamonitrile.

α -Phenyl-*p*-methoxycinnamonitrile.

α -Phenylmethylenedioxy-cinnamonitrile.

α -Phenylnitrocinnamonitriles.

α -Phenyl-*p*-isopropylcinnamonitrile.

Propionitrile.

Propionylacetonitrile.

5-*iso*Propylheptanone-2-nitrile-7.

p-Toluenitrile.

p-Tolylisobutyronitrile.

Nitritohydroximidosulphates (DIVERS and HAGA), T., 432; P., 1900, 54.

Nitro-compounds, cryoscopic behaviour of, in formic acid (BRUNI and BERTI), A., ii, 591.

primary or secondary, ammonium salts of, and their separation (KONOWALOFF), A., i, 324.

coloured substances derived from (HANTZSCH and KISSEL), A., i, 89; (JACKSON and GAZZOLO), A., i, 433.

additive compounds of, with sodium hydroxide or alkylloxides (HANTZSCH and KISSEL), A., i, 89; (JACKSON and GAZZOLO), A., i, 433; (ANGELI), A., i, 553.

aromatic, action of sodium sulphides on (BLANKSMA), A., i, 226, 482.

*iso***Nitro-compounds**, history of the (HANTZSCH), A., i, 618.

Nitrogen, atomic weight of (DEAN), T., 117; P., 1899, 213.

quinequevalent (LACHMAN), A., i, 380; (VAUBEL), A., i, 485.

isomeric partially racemic salts containing (KIPPING), T., 861; P., 1900, 51.

stereochemistry of (LE BEL), A., i, 15; (MARCKWALD), A., i, 143.

fluorescence and afterglow accompanying an electric discharge in (LEWIS), A., ii, 702.

specific gravity of, at its boiling point (DRUGMAN and RAMSAY), T., 1228; P., 1900, 172.

products of the explosion of mixtures of acetylene and (MIXTER), A., i, 618.

absorption coefficient of, by aqueous solutions of dissociating substances (BRAUN), A., ii, 529.

- Nitrogen**, solubility of, in various liquids, at low temperatures (CLAUDE), A., ii, 649.
 from albumoses (FRIEDMANN), A., i, 265.
 basic, proportion of, in elastin (EUSTIS), A., i, 317.
 the condition of, in proteids (HAUSMANN), A., i, 317.
 from the decomposition of proteids, amount of (HENDERSON), A., i, 265.
 in malt, dissolution of the (PETIT and LABOURASSE), A., ii, 611.
- Nitrogen compounds**, spectroscopic method of determining the constitution of (BRÜHL), A., i, 210.
- Nitrogen bromides**, substituted, and their relation to bromo-substituted anilides and anilines (CHATTAWAY and ORTON), A., i, 152.
- Nitrogen bromides and chlorides**, substituted (ARMSTRONG), T., 1047; P., 1900, 160; (STIEGLITZ and SLOSSON), P., 1900, 2; discussion, P., 2.
 transformation of (CHATTAWAY, ORTON, and HURTLEY), A., i, 151; (CHATTAWAY and ORTON), A., i, 152, 643.
 method of transforming (CHATTAWAY and ORTON), T., 796.
 from *o*- and *p*-acetotoluidides (CHATTAWAY and ORTON), T., 789; P., 1900, 102.
 ortho-substituted, and their transformation (CHATTAWAY and ORTON), T., 797; P., 1900, 112.
- Nitrogen chlorides**, substituted (CHATTAWAY and ORTON), T., 134; P., 1899, 232.
 from *m*-chloroacetanilide (CHATTAWAY, ORTON, and HURTLEY), T., 800; P., 1900, 125.
- Nitrogen iodide**, N_3I (HANTZSCH), A., ii, 274.
 $N_2H_3I_3$, preparation and properties of so-called (CHATTAWAY and ORTON), A., ii, 399.
 formation and constitution of (CHATTAWAY and ORTON), A., ii, 722.
 composition of (CHATTAWAY), A., ii, 594.
 action of light on* (CHATTAWAY and ORTON), A., ii, 594.
 action of acids on (CHATTAWAY and STEVENS), A., ii, 722.
 action of alkaline hydroxides, of water, and of hydrogen peroxide on (CHATTAWAY and ORTON), A., ii, 722.
 action of reducing agents on (CHATTAWAY and STEVENS), A., ii, 399.
 ammonium iodides (HUGOT), A., ii, 274.
- Nitrogen dioxide** (*nitric oxide*), action of, on chromyl dichloride (THOMAS), A., ii, 144.
- Nitrogen tetroxide** (*nitric peroxide*), thermal conductivity of (MAGNANINI and ZUNINO), A., ii, 525.
 as a solvent (BRUNI and BERTI), A., ii, 591.
 action of, on quinonedioximes (OLIVERI-TORTORICI), A., i, 553.
- Nitrogen acids** :—
Nitric acid, formation of, during combustion (BERTHELOT), A., ii, 475, 538.
 production of, from air, by means of the electric flame (McDOUGALL and HOWLES), A., ii, 651.
 very dilute, action of, on metals (VAN BIJLERT), A., ii, 204.
 analysis of, and when mixed with sulphuric acid (VAN GELDER), A., ii, 621.
 detection of, in animal matter (VITALI), A., ii, 46.
 detection of, in milk and in water (UTZ), A., ii, 438.
 estimation of (POOL), A., ii, 107; (VAN DEVENTER), A., ii, 242.
 estimation of, in water (HÖNIG), A., ii, 242.
- Nitrates**, origin of, in caves (HESS), A., ii, 550.
 action of *Bacillus coli* and *B. d'Eberth* on (GRIMEERT), A., ii, 97.
 metallic, reduction of, by lactic acid (VANINO and HAUSER), A., ii, 722.
 See also Agricultural Chemistry.
- Nitrous acid**, affinity constant of (SCHÜMANN), A., ii, 264.
 condition of, in aqueous solutions (SAPOSCHNIKOFF), A., ii, 722.
 sulphonation of, by sulphurous acid (DIVERS and HAGA), T., 688; P., 1900, 70.
 detection and estimation of very small quantities of (ERDMANN), A., ii, 243.
 detection of, in water (ERDMANN), A., ii, 243; (SPIEGEL), A., ii, 318; (MENNICKE), A., ii, 438, 621; (SCHAER), A., ii, 438.
 estimation of, gasometrically, in presence of nitrates or other soluble salts (GAILHAT), A., ii, 686.
 estimation of, in water (ROMIJN), A., ii, 510.
- Nitrites**, interaction between sulphites and (DIVERS and HAGA), T., 673; P., 1900, 70.

Nitrogen acids:—

Hyponitrous acid, transformation of, into hydrazine (v. BRACKEL), A., ii, 594.

Nitrogen, detection and estimation of:—
detection of, in organic compounds containing sulphur (TÄUBER), A., ii, 107.

estimation of (VILLIERS and DUMESNIL), A., ii, 310.

estimation of, by Kjeldahl's method, improved apparatus for (MEHRING), A., ii, 509.

nitric, estimation of, by Schloesing's method (DAVIDSON), A., ii, 437.

estimation of, in fertilisers containing nitrates (VEITCH), A., ii, 166.

comparative estimations of, in salt-petre (v. WISELL), A., ii, 685.

estimation of, in urine (PFAUNDLER), A., ii, 674.

estimation of ammonia and, in water, apparatus for (WESTON), A., ii, 685.

See also Agricultural Chemistry.

Nitro-group, stereochemical behaviour of the (WEDEKIND), A., i, 216.

elimination of a, during diazotisation (MELDOLA and WECHSLER), T., 1172; P., 1900, 167.

direct introduction of a, into the side chain of aromatic amines (BAMBERGER and HOFF), A., i, 435.

rate of substitution of, by an alkoxyl (DE BRUYN), A., i, 146.

Nitrohydroxylaminic acid and its salts (ANGELI and ANGELICO), A., ii, 594, 722.

"Nitroic acids" (HANTZSCH and KISSEL), A., i, 89; (ANGELI), A., i, 552.

Nitroprussides, detection of, in cases of poisoning (VENTUROLI), A., ii, 174.

Nitrosates (IPATIEFF and SOLONINA), A., i, 3.

Nitrosoamines of methylated nitroanilines (BAMBERGER and MÜLLER), A., i, 217.

Nitroso-compounds from 2-ketocarboxylic esters (DIECKMANN; DIECKMANN and GROENEVELD), A., i, 297.

reaction of (ANGELI and ANGELICO), A., ii, 722.

aromatic, condensation of, with methylene derivatives (SACHS), A., i, 362.

fatty, preparation of (SCHMIDT), A., i, 332.

Nitrosyl chloride, action of, on organic compounds containing a double linking (IPATIEFF and SOLONINA), A., i, 14.

Nitrosyl chloride and its compounds with antimony, iron and tin chlorides (VAN HETEREN), A., ii, 137.

Nodules. See Agricultural Chemistry.

Nonaldehyde from German rose oil (WALBAUM and STEPHAN), A., i, 677.

Nopinone (WALLACH and SCHÄFER), A., i, 241.

Norpic acid from verbenone (KERSCHBAUM), A., i, 353.

Nortropan (*norhydrotropidine*) and its iminochloride (WILLSTÄTTER and IGLAUER), A., i, 458.

Nortropidine and its chloro-derivative (WILLSTÄTTER and IGLAUER), A., i, 458.

Nucleic acid from various sources, formula of (HERLANT), A., i, 466.
from salmon milt (SCHMIEDEBERG), A., i, 267.

of the wheat germ (OSBORNE and CAMPBELL), A., i, 573.

solubility of uric acid in (KOSSEL and GOTO), A., ii, 421; (GOTO), A., ii, 740.

Nucleic acids, preparation of (LEVENE), A., i, 572.

Nucleic acids, α - and β -, and Nucleothymic acid, preparation of (NEUMANN), A., i, 319.

Nuclein, metabolism of (LOEWI), A., ii, 417.

Nucleins, combination of, with metals, alkaloids, and toxins (STASSANO), A., ii, 559.

metabolism of (MILROY and MALCOLM), A., ii, 91.

Nucleons (KRÜGER), A., i, 128.

Nux vomica, composition of the albumen of (BOURQUELOT and LAURENT), A., ii, 498.

O.

Oats. See Agricultural Chemistry.

Obituary notices:—

Peter Waage, T., 591.

William Harkness, T., 592.

J. F. Hodges, T., 593.

William Marcet, T., 594.

George Henry Ogston, T., 594.

Robert Oxland, T., 595.

Richard Tayler Plimpton, T., 595.

Henry Charles Reynolds, T., 596.

Edward C. Cortis Stanford, T., 597.

Sidney Augustus Sworn, T., 598.

William Thorp, T., 599.

Johann K. F. Ferdinand Tiemann, T., 600.

David Watson, T., 603.

- Oceanic salt deposits**, formation of (VAN'T HOFF and MEYERHOFFER), A., ii, 12, 23; (VAN'T HOFF and DAWSON), A., ii, 76; (VAN'T HOFF and CHIARAVIGLIO; VAN'T HOFF and KASSATKIN), A., ii, 284; (WILSON), A., ii, 285; (VAN'T HOFF and ARMSTRONG), A., ii, 531.
- n-Octane**, vapour pressures, specific volumes, and critical constants of (YOUNG), T., 1145; P., 1900, 166.
- Octane** (*disobutyl*), preparation, vapour pressures, specific volumes, and critical constants of (YOUNG and FORTEY), T., 1126; P., 1900, 165.
- Octanedicarboxylic acids**. See:—
Dipropylsuccinic acids.
Propylisopropylsuccinic acids.
- Octazones**. See: Bisdiazotetrazones.
- $\gamma\delta$ -isoOctenic acid and isoOctolactone** (FROMM), A., i, 402.
- Octenoic acid** ($\gamma\delta$ -dimethyl- β -hexenoic acid), and its ethyl ester (BLAISE), A., i, 330.
- Octoaspartide** and its combinations with amines (SCHIFF), A., i, 279.
- Octohydro-acridine- and -xanthenediones** and their oximes (VORLÄNDER and KALKOW), A., i, 99.
- β -Octylamine**, and the action of silver oxide on bromo- (KIJNER), A., i, 278.
- Octylhydrazine** and its compound with phenylthiocarbimide (KIJNER), A., i, 278.
- Oil cakes**. See Agricultural Chemistry.
- Oils**, lubricating, decomposition of, by distillation under pressure (KRAEMER and SPILKER), A., i, 617.
mineral. See Petroleum.
vegetable, composition and constants of (SCHIMMEL and Co.), A., i, 184.
viscosity of (DOWZARD), A., i, 676.
analysis of (SOLDANI and BERTÉ), A., ii, 173.
Welmans' phosphomolybdate test for the detection of (WELMANS; SOLT-SIEN), A., ii, 697.
improved absorption apparatus for use in the analysis of (CHAPMAN and BURGESS), A., ii, 693.
Bechi and Halphen's colour tests for cotton-seed oil in (RAIKOW and TSCHERWENIWANOW), A., ii, 252.
estimation of carvone in (LABBÉ), A., i, 398; (ALDEN and NOLTE), A., ii, 117; (ALDEN and EHLERT), A., ii, 631.
estimation of, in essences (WENDER and GREGOR), A., ii, 767.
rancidity of (NAGEL), A., i, 271.
analysis of, refractometrically (PAR-THIEL and V. VELSEN), A., ii, 633.
- Oils**, estimation of the acetyl value of (LEWKOWITSCH), A., ii, 323.
estimation of the bromine absorption of (MCILHINEY), A., ii, 178, 633.
bromine and iodine values of (WILLIAMS), A., ii, 633.
estimation of the iodine method for (HILL and ADAMS; LEWKOWITSCH), A., ii, 323; (WIJS; MARSHALL), A., ii, 376.
- Oils**. See also:—
Abies canadensis, oil from.
Abies pectinata, oil from.
Aralia nudicaulis, oil from.
Bean oil.
Bergamot oil.
Bitter orange oil.
Carthamus tinctorius, oil from.
Cascarilla oil.
Chrysanthemum japonicum, oil from.
Citronella oil.
Colophony oil.
Corn oil.
Cotton-seed oil.
Fir-wood, oil of.
Fish oil.
Geranium oil.
Ginger oil.
Glycyrrhiza glabra, oil from.
Hazelnut oil.
Jasmine oil.
Juniper oil.
Kaempferia Galanga, oil of.
Larix decidua, oil from.
Lavender, oil of.
Lemon oil.
Linseed oil.
Macassar oil.
Maize oil.
Mandarins, oil of.
Mentha piperita, oil of.
Mustard oil.
Neroli oil.
Olive oil.
Parsley oil.
Petit-grain, oil of.
Poplar-bud oil.
Roses, oil of.
Safflower oil.
Sandalwood oil.
Savin, oil of (*oleum sabine*).
Sesamé oil.
Telfairia oil.
Turpentine, oil of.
Wheat germ, oil from.
- Olefines**, velocity of formation of (BRUSOFF), A., i, 322.
- Oleic acid**, commercial and purified (DIRZ), A., ii, 632.
action of dilute nitric acid on (EDMED), P., 1899, 190.

- Oleic acid**, reduction of, to stearic acid by the aid of nascent hydrogen (FREUNDLICH and ROSAUER), A., i, 581.
 estimation of, in olive oil (MOORE), A., ii, 376.
 separation of, from other fatty acids (LEWKOWITSCH), A.; ii, 376; (FARNSTEINER), A., ii, 767.
- Olive oil**, estimation of free fatty acid in (MOORE), A., ii, 376.
- Olives**. See Agricultural Chemistry.
- Olivine** from Japan (JIMBÔ), A., ii, 87.
 from Latium (ZAMBONINI), A., ii, 149.
 pseudomorphs after, from the Urals (v. JEREMÉEFF), A., ii, 354.
- Opianic acid**, thermochemistry of (LEROY), A., ii, 261.
- Opium**, assay of (NAGELVOORT; GORDIN), A., ii, 777.
 detection of (MECKE), A., ii, 180.
- Opoponax**, examination of (DIETERICH), A., ii, 118.
- Optical isomerides**, solidification and transition phenomena of (ADRIANI), A., ii, 462.
 melting points in systems of (ROOZEBOOM), A., ii, 64.
- Orange**, bitter, oil of, properties of (SOLDAINI and BERTÉ), A., ii, 173.
- Orange blossom oil**. See Neroli oil.
- Orcinobis- α -oxy-propionic-, -butyric, and -isovaleric acids** and their ethyl esters (BISCHOFF), A., i, 446.
- Orcinol** (3:5-dihydroxytoluene), condensation of the disodium derivative of, with esters of α -bromo-fatty acids (BISCHOFF), A., i, 446.
 nitroso- and its methyl ether (FARMER and HANTZSCH), A., i, 103; (HENRICH), A., i, 163, 436.
- Orcinoltricarboxylic acid**, methyl and ethyl esters, formation, constitution and nitration of (DOOTSON), T., 1198; P., 1900, 170.
 nitro-, hydrolysis of the methyl ester, and reduction of the methyl and ethyl esters of (DOOTSON), T., 1199; P., 1900, 170.
- Ores**, detection of minute quantities of gold in (DÖRING), A., ii, 371, 445.
 estimation of alumina as phosphate in (CAMP), A., ii, 763.
 New Caledonian, estimation of cobalt in (MOORE), A., ii, 764.
 containing arsenic, estimation of phosphorus in (CAMP), A., ii, 757.
 estimation and separation of antimony and arsenic in (BECK and FISHER), A., ii, 312.
 estimation of sulphur in (TRUCHOT), A., ii, 309.
- Organic compounds**, electro-synthesis of (DONY-HÉNAULT), A., i, 577; ii, 644.
 supposed negative heat of formation of some (VAUBEL), A., ii, 274.
 open- and closed chain, influence of the side-chain on the properties of (MENSCHUTKIN), A., i, 335, 341.
 oxidation of, with alkaline potassium permanganate (DONATH and DITZ), A., i, 197.
 simultaneous oxidation and hydration of, under the influence of light and oxygen (BERTHELOT), A., i, 3.
 containing a double linking, action of nitrosyl chloride on (IPATIEFF), A., i, 14.
 destruction of, in the detection of metals (GRAS and GINTL), A., ii, 111.
 containing nitrogen, analysis of (BENEDICT), A., ii, 439.
 containing sulphur, detection of nitrogen in (TAUBER), A., ii, 107.
 estimation of elements in (BERTHELOT; VALEUR), A., ii, 172.
 estimation of phosphorus in (MARIE), A., ii, 108.
- Organic substances**, estimation of sulphur in (HENRIQUES), A., ii, 107.
 estimation of zinc in (LEHMANN), A., ii, 170.
- Organism**, syntheses in the (HILDEBRANDT), A., i, 686; ii, 676.
 action of hæmatotoxin on the (METCHNIKOFF and BESREDKA), A., ii, 741.
 formation of acetone in the (WALDVOGEL), A., ii, 153.
 arsenic in the (GAUTIER), A., ii, 152, 226.
 a reducing and hydrogenating enzyme in the (ABELOUS and GÉRARD), A., ii, 226.
 reducing and oxidising enzymes in the (ABELOUS and GÉRARD), A., i, 268.
 formation of fat in the, by intensive feeding of fat (HENRIQUES and HANSEN), A., ii, 668.
 occurrence of lactic acid in the, in arsenical poisoning (MORISHIMA), A., ii, 295.
 origin and excretion of oxalic acid in and from the (SALKOWSKI), A., ii, 740.
 formation and decomposition of uric acid in the (WIENER), A., ii, 153.
 behaviour of glucosamine hydrochloride in the (OFFER and FRÄNKEL), A., ii, 294.
 influence of proteids on the (PFLÜGER), A., ii, 91.
 action of soaps in the (MUNK), A., ii, 418.

Organism, defence of the, against the toxic properties of glandular secretions (CHARRIN and LEVADITI), A., ii, 224.

detection and estimation of arsenic in the (GAUTIER), A., ii, 168 ; (SCHERBATSCHIEFF), A., ii, 622.

Organo-metallic compounds. See:—

Acetylene cuprous and potassium chlorides.

Allenmercury salts.

Benzenediazonium nitrate mercurinitrite.

Benzene-mono- and -tri-dimetaphosphoric acid.

Boric acid esters.

Butanolmercury salts.

Butenmercury iodide.

Dianilinoorthophosphoric acid.

Dianilinophosphoryl chloride.

Di-*p*-phenetidinophosphoric acid.

Diphenylcarbazone metallic derivatives.

Ethanolmercury salts.

Ethenmercury salts.

Ethyl ether mercury chloride.

Hydroxymercuribenzoic acid.

Mercarbide.

Mercuriacetic acid.

Mercuribenzoic acid.

Mercuricrotonic acid.

Mercurilavulic acid.

Mercurisalicyllic acid.

Mercuroheptanaphthene iodide.

Mercurydiethyl.

Mercurydimethyl.

Mercurydiphenyl.

Methylethylpropyltin salts.

Osmyloxalic acid.

Oxymethylphosphoric acid.

Palladobisphenylammonium salts.

Palladodi-piperidium and -quinolium chlorides.

Pallado-oxalic acid.

Phosphoxyanilides.

Platosemiallyl alcohol.

Platosemiethylene chlorides.

Propanolmercury salts.

Propenolmercury salts.

Salicylhydramide copper derivatives.

Tetraethylphosphonium compounds.

Tetraethylstibonium salts.

Tetramethylphosphonium compounds.

Tetrapropylstibonium salts.

Trimercuriacetic acid.

Tripropylenediaminechromium iodide.

Tripyridinechromium trichloride.

Tungsten alkyls.

Zinc ethyl.

Organs, estimation of uric acid and purine bases in (HIS and HAGEN), A., ii, 769.

Orientation, influence of various groups on (LAPWORTH), P., 1900, 108.

of chromophores, influence of, on the colour and other properties of dyes (REVERDIN and CRÉPEUX), A., i, 701.

Orthocalse from Japan (JIMBŌ), A., ii, 88.

from Russia (TARASSENKO), A., ii, 26.

Osazones, solubility of (NEUBERG), A., i, 410.

Osmium sulphite and chlorosulphite, compounds of, with sodium and potassium (ROSENHEIM), A., ii, 660.

Osmyloxalic acid, salts of (WINTREBERT), A., i, 543.

Osmotic pressure. See Diffusion.

Osones, formation and isolation of (MORRELL and CROFTS), T., 1219 ; P., 1900, 171.

Ovarian cysts, ψ -mucin from (ZÄNGERLE), A., ii, 675.

Ovaries, extract of, influence of, on the excretion of urea during pregnancy (CHARRIN and GUILLEMONAT), A., ii, 554.

Ovum, action of increased osmotic pressure on the (BATAILLON), A., ii, 554.

Oxalacetic acid, preparation, properties and reactions of (FENTON and JONES), T., 77 ; P., 1899, 224.

formation of (DENIGÈS), A., i, 204.

formation of, by the oxidation of teraconic acid (FITTIG), A., i, 375.

Oxaldiacetic acid. See Cetipic acid.

Oxalic acid, formation of (DENIGÈS), A., i, 204 ; (SABBATANI), A., i, 537.

formation of, from dehydrohomocamphoric acid (LAPWORTH), T., 1070.

oxidation of, by potassium permanganate (v. GEORGIEVICS and SPRINGER), A., ii, 631.

influence of catalytic agents on the oxidation of solutions of (JORISSEN and REICHER), A., ii, 200.

origin and excretion of (SALKOWSKI), A., ii, 740.

estimation of, in beet leaves (BÜLOW), A., ii, 322.

estimation of, in urine (SALKOWSKI), A., ii, 635.

Oxalic acid, cerium salt, composition and estimation of (POWER and SHEDDEN), A., ii, 628.

crystalline manganese salt (DENIGÈS), A., i, 274.

and its salts, osmyl derivatives of (WINTREBERT), A., i, 543.

pallado-derivative of (LOISELEUR), A., i, 542.

- Oxalic acid**, ethyl ester, condensation of, with ethyl crotonate (LAPWORTH), P., 1900, 132.
condensation of, with acetonyl-acetone (GRAY), A., i, 376.
- γ -Oxalocrotonic acid**, ethyl ester (LAPWORTH), P., 1900, 132.
- Oxaluria**, alimentary (PIERALLINI), A., ii, 492.
- Oxaluric acid**, occurrence of, in urine (SALKOWSKI), A., ii, 635.
- Oxamide**, dithio- (*rubeanic acid*), condensation of, with aldehydes and secondary bases (WALLACH), A., i, 210.
- Oxazine dyes**, constitution of (KEHRMANN), A., i, 61; (GREEN), A., i, 119.
- iso***Oxazoles**, formation of (DUNSTAN and GOULDING), T., 1266; P., 1900, 174.
- Oxidation**, theory of (HABER; HABER and BRAN), A., ii, 720.
phenomena of (ENGLER and WEISSBERG), A., i, 399.
influence of catalytic agents on (JORISSEN and REICHER), A., ii, 200.
with free oxygen (OSTWALD), A., ii, 592.
with atmospheric oxygen (BILTZ), A., i, 662.
spontaneous, and formation of active oxygen (MANCHOT), A., i, 300.
of the nature of dehydrogenation by means of ferricyanides (ÉTARD), A., i, 301.
in animal tissues (MEDVEDEFF), A., ii, 738.
- Oxidising agents**, effect of, on the reduction of mercuric and thallic chlorides by oxalic acid (KASTLE and BEATTY), A., ii, 627.
- Oxime** from the acid $C_{13}H_{18}O_5$ (VORLÄNDER and KALKOW), A., i, 99.
from the aldol from *isobutaldehyde* and formaldehyde (WESSELY), A., i, 428.
from the condensation of benzyl cyanide and ethyl fumarate (HENZE), A., i, 347.
 $C_4H_5O_3N_3$, from hydroxylamine hydrochloride and dihydrodiazotetronic anhydride (WOLFF and LÜTTRINGHAUS), A., i, 584.
(m. p. 82°) from the ketone $C_{10}H_{16}O$ from *isofenchyl alcohol* (BERTRAM and HELLE), A., i, 399.
 $C_{12}H_{15}O_4N$, and $C_{13}H_{19}O_3N$ (POND, MAXWELL, and NORMAN), A., i, 102.
- Oximes**, action of Caro's reagent and of nitrogen tetroxide on (BAMBERGER), A., i, 500.
oxidation of (HARRIES), A., i, 504.
- Oximes**. See also :—
Acetaldoxime.
Acetoxime.
1-Acetylcoumarone, oximes of.
Aldehyde-musk, oximes of.
Allylacetone, oxime of.
Amygdalinamidoxime.
p-Anisaldoximes.
Benzaldoxime.
Benzenylanilinoxime.
 β -Benzildioxime.
Benzoylusnic acid, oxime of.
Benzylbenzenylaminooxime.
Benzylchloroformoxime.
Benzylideneacetoxime.
*iso*Butylideneacetone, oxime of.
Butylxylylaldehyde, oxime of.
*iso*Butyralacetone, oxime of.
Camphenyloneoximes.
Camphonic acid, oxime of.
Camphononic acid, oxime of.
Camphordioximes.
Camphorone, oxime of.
Camphoroxime.
Carvoxime.
Chrysoquinoneoxime.
Dehydroacetic acid, oximes of.
Diacetonephenylthiocarbamideoxime.
Diacytyldioxime.
Dibenzylideneacetonehydroxylamine-oxime.
Dibenzylideneacetoneoxime.
o-Diethoxydiphenyltetrahydropyrone-oxime.
Diethylacetoxime.
Dihydroazthiotetride-4-aminooxime.
 α -Diketoximes.
o-Dimethoxydiphenyltetrahydropyroneoxime.
3:5-Dimethoxyquinoneoximes.
3:5-Diphenyl*isooxazolo*oxime.
1:2-Diphenyltetrahydro- β -naphthenoneoxime.
Diphenyltetrahydropyroneoxime.
6-Ethoxyflavanoneoxime.
Ethylethloro*isopropyl*ketoxime.
7-Ethyl*isorosindone*oxime.
Formoximes.
Glycollic aldoxime.
Guaiacol, *isonitroso*-.
*cyclo*Heptanone*isooxime*.
*cyclo*Hexanone*isooxime*.
 α -Hydroxybutalldoxime.
3-Hydroxy-5-methoxy-2-methyl-*p*-quinone-4-oxime.
Hydroxynaphthaloxime.
Hydroxy-*o*-tolualdehydes, oximes of.
Iminodicarboxylic acid, oxime of.
Indoneoxime.
Jasmoneoxime.
Keto-hydroxytriphenyltetrahydrobenzene, oxime of.

Oximes. See:—

- Ketoximes.
 2:6-Lutidyl acetonyl sulphide, oxime of.
 Menthone*isooxime*.
 Mesityloxime.
 Mesoxamideoxime.
 4'-Methoxy-6-ethoxyflavanoneoxime.
 Methyl ethylacetoxime.
 Methyl furfuryl ketone, oxime of.
 Methylheptenoneoxime.
 Methylcyclohexanoneoximes.
 Methylcyclopentanoneoximes.
 5-Methylphenoxazine-2:3-quinone-oxime.
 Methylphloroglucinol oximes.
 β -Naphthoxyacetoneoxime.
 Octohydroacridinedione, oxime of.
 Octohydroxanthenedione, oxime of.
 Orcinol, nitroso-.
 Oximinoacetone.
 β -Oximinobutyrolactone.
 $\beta\theta$ -Oxy- β -methyl- η -octene- ζ -one oxime.
 Phenolphthalein, oxime of.
 Phenoxypropaldoxime.
 Phenylbenzenylaminioxime.
 Phenyl-*p*-tolenylaminioxime.
 Phloroglucinol methyl ethers, oximes of.
 Phthalaldehyde dioxime.
 Pinacolin dioxime.
 Pinenoneoxime.
*iso*Propyl butyl ketone, oxime of.
 Pyridineacetophenoneoxime.
 Pyrrolealdoxime.
 Pyruvamide, oxime of.
 Quinoneoximes.
*iso*Rosindoneoxime.
*apo*Safranoneoxime.
 Santaloneoxime.
 Santonic acid, dioxime of.
 Strychnine, *tetrachloro*-, oxime of.
 Suberone*isooxime*.
 Thujaketoneoxime.
 Thymoquinoneoximes.
 Toluquinoneoxime.
 Tolyloxyacetone, oxime of.
 Tolyloxypropaldehyde, oximes of.
 7-*o*-Toly*is*rosindoneoxime.
 Triketosantonie acid, dioxime of.
 Usnic acid, oximes of.
 Xylenoxyacetone, oximes of.
 Xylenoxyaldehyde, oxime of.
 Xylosoxime.
Oximinoacetone as a pseudo-acid (FARMER and HANTZSCH), A., i, 103.
 α -Oximino-adipic and -pimelic acids from cyclic 2-ketocarboxylic esters (DIECKMANN and GROENEVELD), A., i, 297.

- β -Oximinobutyrolactone** (WOLFF and LÜTTRINGHAUS), A., i, 584.
 α -Oximinoketones as pseudo-acids (FARMER and HANTZSCH), A., i, 103.
 α -Oximino- β - and - γ -methyladipic acids (DIECKMANN and GROENEVELD), A., i, 297.
Oximinophenylacetoneitrile, *p*-chloro- (v. WALTHER and WETZLICH), A., i, 438.
Oximinopropionic acid, hydroxamic acid of (WHITELEY), T., 1040; P., 1900, 145.
Oxyazo-compounds, constitution of (FARMER and HANTZSCH), A., i, 122.
 bromination of (ARMSTRONG and ISHERWOOD), P., 1900, 158.
Oxybassorin (HILGER and DREYFUS), A., i, 379.
***o*-Oxycarbanil** and its ethers, absorption spectra of (HARTLEY, DOBBIE, and PALIATSEAS), T., 839; P., 1900, 130.
Oxycelluloses, two, from cellulose (NASTUKOFF), A., i, 540.
 from cotton, flax, hemp, and rhea (VIGNON), A., i, 628.
 acetyl derivatives of (VIGNON and GERIN), A., i, 629.
 nitro- (VIGNON), A., i, 589, 629.
Oxycobaltamine thiocyanates (MASCETTI), A., i, 541.
Oxycotarnine, and its bromo-derivative and salts (WULFF), A., i, 607.
Oxydiethylenedisulphide/**bromomethylsulphine** and its salts (STRÖMHOLM), A., i, 14.
Oxydiethylenedisulphidemethylsulphine salts, and the action of chlorine on (STRÖMHOLM), A., i, 326.
Oxydiethylenedisulphidethetine and its salts (STRÖMHOLM), A., i, 13.
5-Oxy-1:4-dimethyl-6:7-dihydropurine.
 See Deoxytheobromine.
5-Oxy-1:4-dimethylpurine and its derivatives (TAFEL; BAILLIE and TAFEL), A., i, 121.
2-Oxy-3-ethylpurine and 5:7-dichloro- and iodo-, and their salts (ARMSTRONG), A., i, 636.
Oxygen, evolution of, at the anode in the electrolysis of alkali chloride solutions (FOERSTER and SONNEBORN), A., ii, 645.
 evolution of, from chlorates (SODEAU), T., 137, 717; P., 1899, 157; 1900, 88.
 cause of the evolution of, when oxidisable gases are absorbed by permanganic acid (MORSE and BYERS), A., ii, 406.

Oxygen, specific gravity of, at its boiling point (DRUGMAN and RAMSAY), T., 1228; P., 1900, 172.
 solubility of, in various liquids, at low temperatures (CLAUDE), A., ii, 649.
 influence of the nascent state on the combination of carbon monoxide and (RUSSELL), T., 361; P., 1900, 42.
 influence of finely divided platinum on the combination of hydrogen and (FRENCH), A., ii, 718.
 combination of, with sulphur dioxide (RUSSELL and SMITH), T., 340; P., 1900, 41.
 the rendering, active (ENGLER), A., i, 399.
 active, formation of, in oxidation processes (MANCHOT), A., i, 300.
 atmospheric, oxidation with (BILTZ), A., i, 662.
 oxidation of potassium cobaltocyanide and of chromous salts by (MANCHOT and HERZOG), A., ii, 546.
 oxidations with free (OSTWALD), A., ii, 592.
 in human blood (LOEWY), A., ii, 357.
 absorption of free, by normal urine (BERTHELOT), A., ii, 740.
 estimation of, in copper, by ignition in hydrogen (ARCHBUTT), A., ii, 756.
 estimation of, in water (MUTSCHLER), A., ii, 106; (ZETSCHKE), A., ii, 166.
 estimation of dissolved, in fresh-water, sea-water, sewage effluents, etc. (LETTS and BLAKE), A., ii, 755.
Oxyglutin, formation of (SACHAROFF), A., i, 268.
Oxyhæmoglobin. See under Hæmoglobin.
Oxyhydroditeresantalic acid (MÜLLER), A., i, 678.
Oxymesitol, *di*- and *tri*-bromo-, acetyl derivatives of (AUWERS and BROICHER), A., i, 162.
Oxymethylenecamphor, tautomerism of (BRÜHL), A., i, 497.
88-Oxy-3-methyl- η -octene- ζ -one and its oxime and acetyl derivative (LÉSER), A., i, 130.
Oxymethylphosphoric acid (POSTERNAK), A., ii, 679.
2-Oxy-3-phenylpurine, 5:7-dichloro- (FISCHER), A., i, 417.
Oxyprotein (SCHULZ), A., i, 266.
5-Oxy-1:4:6-trimethyl-6:7-dihydropurine. See Deoxycaffeine.
Oxy-p-2-xylene, 3:5:6-*tri*- and *wa*:3:5:6-*penta*-bromo- and their acetyl derivatives (AUWERS and BROICHER), A., i, 162.

Ozone, formation of, by a point-discharge in oxygen (WARBURG), A., ii, 721.
 production of, by the decomposition of water by fluorine (MOISSAN), A., ii, 13.
 apparatus for exhibiting the production of (TECLU), A., ii, 72.
 molecular weight of (LADENBURG), A., ii, 721.
 estimation of (TECLU), A., ii, 437; (BRUNCK), A., ii, 572.
 estimation of, from ozonisers (ACKERMANN), A., ii, 509.

P.

Pachyrhizide, a fish poison and its anhydride (VAN SILLEVOLDT), A., i, 109.
Palladium, atomic weight of (HARDIN), A., ii, 85.
Palladous ammonium trichlorosulphite (ROSENHEIM and ITZIG), A., ii, 282.
 potassium iodonitrite (ROSENHEIM and ITZIG), A., ii, 282.
Palladium organic compounds:—
Palladium, ethylenediamine compounds of (KURNAKOFF and GWOSDAREFF), A., i, 209.
Palladous potassium oxalonitrite (ROSENHEIM and ITZIG), A., ii, 282.
Pallado-bisphenylammonium chloride and bromide, -dipiperidium and -diquinolinium chlorides (HARDIN), A., ii, 85.
Pallado-oxalic acid and its salts (LOISELEUR), A., i, 542.
Palladium, detection of:—
 new microchemical test for (POZZI-ESCOT and COUQUET), A., ii, 371.
Palladium black, action of a mixture of benzene vapour and hydrogen on (LUNGE and AKUNOFF), A., i, 543.
Palladium hydrogen, nature of (SHIELDS), A., ii, 215.
Palm kernels. See Agricultural Chemistry.
Pancreas, secretion of the (WALTER), A., ii, 553.
 autodigestion of the (PFÖRRINGER), A., ii, 28.
 glycolytic action of the (PIERALLINI), A., ii, 420.
 lactase of the (WEINLAND), A., ii, 93.
Pancreatic juice, influence of bile, of acid, and of alkalis on the proteolytic action of (RACHFORD), A., ii, 91.
Pancreatin, action of papain on (HARLAY), A., i, 468.
Papain, action of heat on (HARLAY), A., i, 420.

- Papain**, action of, on gelatin (SACHAROFF), A., i, 268.
 action of, on pepsin and pancreatin (HARLAY), A., i, 468.
 digestion of albumin and fibrin by (HARLAY), A., i, 419.
- Parabanic acid** (*oxalylcarbamide*), synthesis of (CAZENEUVE), A., i, 144.
- Parachymosin** and chymosin (BANG), A., ii, 356.
- Paraffins, nitro-**, new method for the preparation of (AUGER), A., i, 578.
 electrical conductivity of sodium derivatives of (SULC), A., ii, 332.
 action of alkalis on, and reduction of, and of their salts (DUNSTAN and GOULDING), T., 1266; P., 1900, 175.
 action of zinc alkyls on (BEWAD), A., i, 629.
 reactions of (HANTZSCH and KISSEL), A., i, 90.
- Paraformaldehyde**. See under Formaldehyde.
- Paramucosin** (LEATHES), A., i, 318.
- Paranuclein** from casein, phosphorus in (JACKSON), A., ii, 606.
- Paranucleo-compounds**, chemistry of (LEVENE and ALSBERG), A., ii, 555.
- Parapropaldehyde**. See Propaldehyde.
- Paraxanthine**. See Xanthine.
- Paris-green**, estimation of arsenic in (SMITH), A., ii, 47; (HAYWOOD; HILGARD), A., ii, 758.
- Parisite** from Greenland (FLINK), A., ii, 410.
- Parsley oil**, constituents of (BIGNAMI and TESTONI), A., i, 400.
- Parsnip**. See Agricultural Chemistry.
- Parthenogenesis**, artificial (LOEB), A., ii, 555, 608; (VIGNIER), A., ii, 608.
- Passivity** of metals (HITTOFF), A., ii, 705.
- Pastry**, examination of commercial (JUCKENACK; BEIN), A., ii, 460.
- Pears**, distribution of sugar, acid, and tannin in (KELHOFER), A., ii, 497.
- Pear trees**. See Agricultural Chemistry.
- Peas**. See Agricultural Chemistry.
- Peat**, accumulation of iron in (VAN BEMMELEN), A., ii, 215.
- Peat-meal molasses**. See Agricultural Chemistry.
- Peat soil**. See Agricultural Chemistry.
- Pectolite** from New Jersey (CLARKE and STEIGER), A., ii, 24.
 action of ammonium chloride on (CLARKE and STEIGER), A., ii, 24, 414.
- Pegmatites** of the Upper Veltlin, minerals in (LINCK), A., ii, 286.
- Péligot's absorption apparatus**, improvement in (PANNERTZ), A., ii, 621.
- Pentacetoxy- β -naphthalene** (THIELE and WINTER), A., i, 505.
- Pentacetyl**. See under the Parent Substances.
- cycloPentadiene**, ketone reactions of (THIELE), A., i, 298.
 physiological action of (ELFSTRAND), A., ii, 423.
- Pentaglycol**. See Dihydroxydimethylpropane.
- Pentahydroxynaphthaquinone** and its pentacetyl derivative (THIELE and WINTER), A., i, 505.
- Pentamethylbenzhydrol** and its acetyl derivative (WEILER), A., i, 214.
- 3:5:2':4':6'-Pentamethyldiphenylmethane**, synthesis of (WEILER), A., i, 213, 284.
- Pentamethylene derivatives**, new series of (PERKIN, THORPE, and WALKER), P., 1900, 149.
 See also *cyclo*Pentane.
- Pentamethylenehexacarboxylic acid** (BOTTOMLEY and PERKIN), T., 294; P., 1900, 16.
- Pentamethylene-1:2:4-tricarboxylic acid**, *cis*- and *trans*-, synthesis of (BOTTOMLEY and PERKIN), T., 296; P., 1900, 16.
- Pentamethyloctohydro-xanthenedione** (VORLÄNDER and KALKOW), A., i, 100.
- Pentane**, physiological action of (ELFSTRAND), A., ii, 423.
- cycloPentane** (*pentamethylene*) derivatives, synthesis of, by means of ethyl adipate (BOUVEAULT), A., i, 171.
 See also Pentamethylene.
- Pentanedicarboxylic acids**. See Dimethylglutaric acids.
- Pentanehexacarboxylic acid**, ethyl ester (BOTTOMLEY and PERKIN), T., 294; P., 1900, 16.
- Pentanetricarboxylic acid** and its decomposition (BOTTOMLEY and PERKIN), T., 294; P., 1900, 16.
- 2-cycloPentanonecarboxylic acid** (2-ketopentamethylenecarboxylic acid) and its derivatives (BOUVEAULT), A., i, 171.
 diethyl ester, bisnitroso- (DIECKMANN), A., i, 297.
- Pentinene** (*isoprene*), constitution of (MOKIEWSKY), A., i, 509.
- Pentosans**, automatic apparatus for the estimation of (STANĚK), A., ii, 373.
- Pentose**, isolation of, from urine (BERGELL and BLUMENTHAL), A., ii, 373.
- Pentoses** (SULEIMAN BEY), A., i, 377.
 estimation of, in urine (SULEIMAN BEY), A., ii, 446.

- Pentylenedicarboxylic acid.** See Dimethylglutaconic acid.
- Pepper, Cayenne,** active principle of (MICKO), A., ii, 58.
- analysis of (GREGOR), A., ii, 775.
- Pepsin,** secretion of, in gastric disease (ROTH), A., ii, 422.
- action of papain on (HARLAY), A., i, 468.
- use of, for estimating the products of digestion (EFFRONT), A., ii, 59.
- Pepsin activity,** quantitative relationships of (SCHÜTZ), A., ii, 666.
- Peptone,** Lilienfeld's so-called (KLIMMER), A., i, 72.
- Peptones,** formation of (BOKORNY), A., i, 126.
- influence of, on urinary secretion (THOMPSON), A., ii, 226.
- Perezone** (*pipitzaholic acid*) as an indicator in alkalimetry (DUYK), A., ii, 308.
- Perfumes,** and the sense of smell (ERDMANN), A., ii, 357.
- behaviour of, in liquid air (ERDMANN), A., ii, 468.
- Pericline** from Salzburg (VIOLA), A., ii, 663.
- Periodic law,** isomorphism in the (BEHRENS), A., ii, 136.
- Periodic system,** representation of the (SCHRMEISEN), A., ii, 397.
- Peronine.** See Morphine benzyl ether.
- Perowskite** from S. Ambrogio (BOERIS), A., ii, 600.
- Peroxides,** nomenclature of the (v. BAEYER and VILLIGER), A., i, 626.
- metallic, differences in reactions of (TANATAR), A., ii, 211.
- Petit grain,** oil of (JEANGARD and SATIE), A., i, 511.
- Petrocenes** and their derivatives (ZALOZIECKI and GANS), A., i, 593.
- Petroleum,** theory of the origin of (KRAEMER and SPILKER), A., i, 73.
- formation of (KRAEMER and SPILKER), A., i, 73; (ENGLER), A., ii, 216.
- new aromatic hydrocarbon from (KLAUDY and FINK), A., i, 284.
- hydrocarbons with high melting points from (ZALOZIECKI and GANS), A., i, 593.
- Californian, Canadian, Japanese, and Pennsylvanian, composition of (MABERY), A., i, 533.
- Roumanian (SALIGNY), A., ii, 282; (EDELEANU and FILITI), A., ii, 486.
- composition of (PONI), A., i, 617.
- Russian, composition of (WISCHIN), A., i, 146.
- Petroleum,** Texas, composition of (THIELE), A., ii, 147.
- heavy Texas, hydrocarbons in (MABERY and BUCK), A., i, 577.
- estimation of sulphur in (FRIEDLÄNDER), A., ii, 107.
- Petzite** from California (HILLEBRAND), A., ii, 22.
- Phænogams.** See Agricultural Chemistry.
- Phallin,** physiological action of (KOBERT), A., ii, 156.
- Pharmacosiderite** from Cornwall (HARTLEY), A., ii, 23.
- Phase rule.** See Equilibrium.
- Phascolus multiflorus.* See Agricultural Chemistry.
- Phenacetin,** action of sulphuric acid on (COHN), A., i, 29.
- test for, in antipyrine (RAIKOW and SCHARBANOW), A., ii, 456.
- Phenacetyl tartaric acid,** diethyl ester, rotation of (MCCRAE and PATTERSON), T., 1096; P., 1900, 161.
- Phenanthraquinone,** *mono-* and *di-*nitro- (KEHRMANN and KIKINE), A., i, 61.
- Phenanthrene,** refraction of (CHILESOTTI), A., i, 339.
- Phenazothionium** chloride, platinichloride, and dichromate, 3:5-*diamino*- (KEHRMANN and SCHILD), A., i, 63.
- Phenazoxonium** bromide, *diamino*- (KEHRMANN and THOMAS), A., i, 62.
- Phenetidine,** detection of, in urine (EDLEFSEN), A., ii, 378.
- "*p*-Phenetidine, cyano-" and its acetyl and guanidine derivatives (MEVES), A., i, 483.
- p*-Phenetylcabamidesulphonic acid (COHN), A., i, 29.
- Phenoketopentamethyleneazine** (THOMAS-MAMERT and WEIL), A., i, 459.
- Phenol,** dissociation constant of (WALKER and CORMACK), T., 18; P., 1899, 208.
- equilibrium between water, hydrochloric acid and (KRUG and CAMERON), A., ii, 393.
- equilibrium between water, *d*-tartaric or racemic acid and; and water, acetone and (SCHREINEMAKERS), A., ii, 393.
- action of cyanogen bromide on (SCHOLL and NÖRR), A., i, 436.
- condensation of, with ethyl phenylpropiolate (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- action of phosphoryl chloride on (ODDO), A., i, 92.
- analysis of mixtures of cresols and (DITZ and CEDIVODA), A., ii, 54; (VAUBEI), A., ii, 112.

- Phenol**, estimation of (RIEGLER), A., ii, 112.
- Phenol**, *m*-amino-, condensation of, with ethyl acetoacetate (V. PECHMANN; V. PECHMANN and SCHALL), A., i, 173; (V. PECHMANN and SCHWARZ), A., i, 174.
- p*-amino-, hydroxyazobenzene and sulphur, compounds from (RIS), A., i, 419.
- tri*-, *tetra*-, and *penta*-bromo- (AUWERS and ANSELMINO), A., i, 160.
- 4:6-dibromo-2-nitro- and 4:6-dibromo-2-amino- (THIELE and EICHWEDE), A., i, 501.
- mono*-, *di*-, and *tri*-chloro-, cyano-, and nitro-derivatives, hydrolysis of (HANTZSCH), A., i, 95.
- o*-nitro-, from nitrobenzene (WOHL), A., i, 157.
- p*-nitro-, as an indicator (SPIEGEL), A., ii, 754.
- 2:4:6-trinitro-. See Picric acid.
- nitroso-, alkaline solutions of, action of benzenediazonium chloride on (BORSCHKE), A., i, 24, 594.
- thio-. See Phenyl mercaptan.
- Phenol bromide**, *tribromo*-, constitution of (THIELE and EICHWEDE), A., i, 288.
- Phenol compounds**, new reagent for (CANDUSSIO), A., ii, 513.
- Phenol ethers**, action of cyanogen bromide and aluminium chloride on (SCHOLL and NÖRR), A., i, 386.
- Phenols**, influence of the solvent on the cryoscopic behaviour of (AUWERS, BARTSCH, and SMITH), A., ii, 66.
- action of benzenesulphonic chloride on, in alkaline solution (GEORGESCU), A., i, 343.
- bromination of (DITZ), A., i, 225; (DITZ and CEDIVODA), A., ii, 54; (VAUBEL), A., ii, 112.
- degradation of, during bromination (AUWERS and ANSELMINO), A., i, 159.
- action of, on ethyl acetylenedicarboxylate (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.
- action of ethylidene chloride on (FOSSE and ETTLINGER), A., i, 392.
- action of, on ethyl phenylpropionate (RUHEMANN and BEDDOW), T., 984, 1119; P., 1900, 123, 165.
- condensation of, with salol and with phenyl-*p*-cresotol (COHN), A., i, 548.
- compounds of bismuth with (RICHARD), A., i, 593.
- crystalline compounds of, with succinimide (VAN BREUKELEVEEN), A., i, 343.
- Phenols**, sodium derivatives, compounds of, with ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 345, 392, 393, 394, 395, 396, 442, 443, 445, 446.
- trisubstituted, action of ethyl nitrite on (THIELE and EICHWEDE), A., i, 501.
- estimation of (RIEGLER), A., ii, 112.
- Phenols**, amino-, action of phenyl cyanate on (FISCHER), A., i, 416.
- bromo-, insoluble in alkalis, formulae of (AUWERS), A., i, 96.
- oxidation products of (AUWERS; AUWERS and EBNER), A., i, 161; (AUWERS, BROICHER, and WOLFF), A., i, 162.
- reduction of (DITZ), A., i, 225; (VAUBEL), A., ii, 112.
- bromo- and chloro-derivatives, action of nitrous and nitric acids on (ZINCKE), A., i, 545.
- Phenols**, list of. See Alcohols and Phenols.
- Phenolazobenzeneazophenol** and its diacetyl derivative (MELDOLA and WILLIAMS), P., 1899, 196.
- Phenolphthalein**, precautions necessary in using, in acidimetric estimations (MAGNIER DE LA SOURCE), A., ii, 620.
- addition of, to marc wines (V. VÁ-MOSSY), A., ii, 676.
- tetrabromo*-, and its oxime (MEYER), A., i, 447.
- Pheno- γ -pyrone**. See Chromone.
- iso***Phenosafuranine** and its salts (KEHRMANN and KRAMER), A., i, 61.
- Phenothiazine**, 3:5-diamino- and 3:5-dinitro- (KEHRMANN and SCHILD), A., i, 62.
- Phenoxazine**, diamino- (KEHRMANN and THOMAS), A., i, 62.
- Phenoxide**, sodium, condensation of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 345.
- Phenoxides**, nitro-, condensation of, with the esters of α -bromo-fatty acids (BISCHOFF), A., i, 442.
- Phenoxozone**, dinitro-. See *o*-Diphenylene oxide, 3:5-dinitro-.
- Phenoxyacetic acid**, 2:4:6-trichloro- and -tribromo-, and their ethyl esters (BISCHOFF), A., i, 443.
- Phenoxyacetophenone** (VANDEVELDE), A., i, 30.
- α -**Phenoxybutyric acids**, and their esters (BISCHOFF), A., i, 345.
- o*-, *m*-, and *p*-nitro-, and their ethyl esters (BISCHOFF), A., i, 442.
- α -**Phenoxyisobutyric acid**, 2:4-dichloro-, and its ethyl ester (BISCHOFF), A., i, 443.
- α -**Phenoxy cinnamic acid**, bromination of (VANDEVELDE), A., i, 30.

- β -Phenoxy cinnamic acid** and its ethyl ester (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
ethyl ester, action of sulphuric acid on (RUHEMANN and STAPLETON), T., 1183; P., 1900, 168.
- Phenoxyfumaric acid** and its ethyl ester and amide (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.
action of sulphuric acid on (RUHEMANN and STAPLETON), T., 1180; P., 1900, 168.
- Phenoxy maleic acid** (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.
- α -Phenoxy-propionacetal**, and **-propaldehyde** and its oxime and semicarbazone (STOERMER), A., i, 650.
- α -Phenoxypropionic acid**, 2:4-dichloro-, and *o*-, *m*-, and *p*-nitro-, and their ethyl esters (BISCHOFF), A., i, 442, 443.
- Phenoxypropionic acids**, α - and β -, and nitro- and amino- (BISCHOFF), A., i, 345.
- α -Phenoxypropionyl-*p*-phenetidine** (BISCHOFF), A., i, 345.
- Phenoxystyrene** (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- α -Phenoxyisovaleric acid** (BISCHOFF), A., i, 345.
o-, *m*-, and *p*-nitro-, and their ethyl esters (BISCHOFF), A., i, 442.
- Phentetrol** and its ethyl ether and triacetyl derivative (KÖHNER), A., i, 224.
- Phenyl cyanate**, action of, on aminophenols, and on uramil (FISCHER), A., i, 417.
ethyl carbonate, *o*- and *p*-amino-, *p*-nitro-, and *p*-ureido- (RANSOM), A., i, 220.
- Phenylacethydroxamic acid** and its acetyl derivative (THIELE and PICKARD), A., i, 30.
- Phenylacetic acid**, β -phenylethyl ester (v. SODEN and ROJAHN), A., i, 489.
p-amino-, reduction of (EINHORN; EINHORN and LADISCH), A., i, 227.
and chloro- and nitro-, action of aldehydes on (v. WALTHER and WETZLICH), A., i, 438.
- ψ -Phenylacetic acid** (BRAREN and BUCHNER), A., i, 292.
- iso-Phenylacetic acids**. See *cyclo*heptatrienecarboxylic acids.
- Phenylacetimino-ethers**, rearrangement of (WHEELER and JOHNSON), A., i, 294.
- Phenylacetonitrile** (*benzyl cyanide*), condensation of, with ethyl cinnamate (ERLENMEYER), A., i, 493.
condensation of, with ethyl fumarate (HENZE), A., i, 347.
- Phenylacetonitrile** (*benzyl cyanide*), and chloro- and nitro-, action of aldehydes on (v. WALTHER and WETZLICH), A., i, 438.
- α -Phenyl-4-acetoxy-3-methoxycinnamic acid**, 2-nitro- and 2-amino- (PSCHORR and SUMULEANU), A., i, 488.
- Phenylacetylchloramine**, discrepancies in the description of its properties, and explanation of the manner it undergoes isomeric change (ARMSTRONG), T., 1047; P., 1900, 160.
See also Phenyl acetyl nitrogen chlorides.
- Phenylacetylene** and its salts, and bromo-, chloro-, and iodo-derivatives (NEF), A., i, 20.
action of hypochlorous and hypobromous acids on (WITTORF), A., i, 421.
- Phenylacetyleneaniline**, iodo- (NEF), A., i, 22.
- Phenyl acetyl nitrogen chlorides**, chloro-derivatives of (*acetylchloro-aminochlorobenzenes*) (CHATTAWAY, ORTON, and HURTLEY), T., 800; P., 1900, 125.
- Phenyl acetyl nitrogen chlorides and bromides** (*acetyl-chloro- and -bromo-aminobenzenes*) and their transformation (CHATTAWAY and ORTON), T., 798; P., 1900, 112.
- β -Phenylacrylic acid**. See Cinnamic acid.
- Phenyl acyl nitrogen bromides** and their bromo-derivatives (CHATTAWAY and ORTON), A., i, 152.
- Phenyl acyl nitrogen chlorides**, *p*-mono- and 2:4:6-tri-chloro- (CHATTAWAY and ORTON), T., 134; P., 1899, 232.
- Phenyl acyl nitrogen chlorides and bromides**, and their behaviour to alkalis, potassium cyanide, and zinc ethyl (STIEGLITZ and SLOSSON), P., 1900, 1; discussion, P., 2.
See also Phenylacetylchloramine.
- d*-Phenylalanine** and its phenylcarbimide (FISCHER and MOUNEYRAT), A., i, 647.
- Phenylallene carboxylic acid** (DRBOGLAFF), A., i, 491.
- Phenylamine**. See Aniline.
- Phenylaminopyridothiazinone** (HARRIES and KLAMT), A., i, 413.
- Phenylamino-**. See also Anilino-.
- Phenyl-4-mono- and -2:4-di-amino-m-tolylmethane**, 4-amino- (COHN and FISCHER), A., i, 690.
- Phenylisoamylaminoacetic acid** (EINHORN and PEIFFER), A., i, 221.
- Phenylazo-**. See Benzeneazo-.
- 3-Phenyl-2:4- Δ^2 -benzoxazazine**, and its nitro-derivatives (WERNER and HERBERGER), A., i, 57.

- Phenylbenzenylaminooxime** and its nitro-derivatives (WERNER and HERBERGER), A., i, 58.
- Phenylbenziminomethyl ether**, action of heat on (WISLIGENUS and GOLDSCHMIDT), A., i, 435.
- 1-Phenylbenzothiazole**, amino-derivatives and their acetyl derivatives (KYM), A., i, 190.
- 1-Phenylbenzoxazole-4-carboxylic acid**, methyl ester (EINHORN), A., i, 441.
- 3-Phenyl-4-benzylbenzazoxazine**, 6-nitro- (WERNER and HERBERGER), A., i, 59.
- Phenylbenzylcyanamide** (TRAUBE and v. WEDELSTÄDT), A., i, 389.
- Phenyl benzyl ethers**, substituted (AUVERS, TRAUN, and WEIÐE), A., i, 168.
- Phenylbenzylhydantoin** (MOUNEYRAT), A., i, 644.
- Phenylbenzylmethylallylammonium salts**, isomeric (WEDEKIND), A., i, 155.
- 1-Phenyl-3-benzoyloxydiazolone** (RUPE and LABHARDT), A., i, 258.
- Phenylbenzylthiosemicarbazide** (CURTIUS), A., i, 611.
- Phenylbromoethylcarbamide** (MENNE), A., i, 286.
- Phenylbromoethylcyanamide** (TRAUBE and v. WEDELSTÄDT), A., i, 390.
- Phenyl^{tert.}butylamine** (NEF), A., i, 4.
- Phenylisobutylcarbinol** (GRIGNARD), A., i, 382.
- Phenylisobutylhydantoin** (MOUNEYRAT), A., i, 644.
- α -Phenylisobutyric acid** (WALLACH), A., i, 229.
- Phenylcamphorformeneamine** and its reactions and **carboxylic acid** (J. B. and A. TINGLE), A., i, 303.
- Phenylcarbamic acid**, carbethoxyamino-phenyl ester (RANSOM), A., i, 219. ethyl ester, and its *o*-, *m*-, and *p*-chloro- and *p*-iodo-derivatives (VITTENET), A., i, 154.
- Phenylcarbimide** (*phenyl isocyanate*), action of, on dibasic acids (BÉNECH), A., i, 340. action of, on ethylacetoacetate (DIECKMANN), A., i, 482. action of, on ethyl β -aminocrotonate (BEHREND and MEYER), A., i, 287. reactions of, with imino ethers (WHEELER and SANDERS), A., i, 563. and its *o*-, *m*-, and *p*-chloro- and *p*-iodo-derivatives (VITTENET), A., i, 154.
- Phenylcarbylamine**, formation of, by the electrolysis of alkaline alcoholic solutions of nitrobenzene and aniline (MÖLLER), A., i, 27; (HABER and SCHMIDT), A., i, 282.
- Phenylcinnamic acid** and its derivatives and nitriles, preparation of (v. WALTHER and WETZLICH), A., i, 438.
- β -Phenylcinnamic acid**, thio-, and its ethyl ester (RUHEMANN and STAPLETON), T., 1181; P., 1900, 168.
- 3- and 4-Phenylcoumarins** and their derivatives, preparation of (v. WALTHER and WETZLICH), A., i, 438.
- Phenylcyanamide**, reactions of (STIEGLITZ and MCKEE), A., i, 340; (TRAUBE and v. WEDELSTÄDT), A., i, 389.
- Phenyldecahydroacridinediones** (VORLÄNDER and STRAUSS), A., i, 100.
- Phenyl- β -diamyldisulphonepropylthiocarbamide** (POSNER and FAHRENHORST), A., i, 17.
- Phenyl diazopyridothiazinone** (HARRIES and KLAMT), A., i, 413.
- Phenyl- β -diethyldisulphonepropylthiocarbamide** (POSNER and FAHRENHORST), A., i, 16.
- 4-Phenyldihydrodithiazine**, 2,6-dicyano- (HELLSING), A., i, 518.
- 1-Phenyl-2,5-diketotetrahydrothiazole** and its 3-methyl derivative (WHEELER and BARNES), A., i, 565.
- α -Phenyldimethoxycinnamic acids**, 2-nitro- and 2-amino- (PSCHORR and SUMULEANU), A., i, 487; (PSCHORR and BUCKOW), A., i, 489.
- 2-Phenyl-6,6-dimethyl-4-benzoylaminoisobutyldihydropyrimidine** (TRAUBE and SCHWARZ), A., i, 118.
- Phenyldimethylcarbinol** (GRIGNARD), A., i, 382.
- Phenyldimethyldihydropyridinedicarboxylic acid**, ethyl ester, action of heat on (GUARESCHI and GRANDE), A., i, 113.
- 1-Phenyl-3:3-dimethyl-indole**, -2-indolinol, -2-indolinone, and -2-methyleneindoline (BRUNNER), A., i, 360.
- Phenyldimethylpyrazoleacetic acid**, ethyl ester (MARCH), A., i, 374.
- 1-Phenyldimethylpyrazolone**. See Antipyrine.
- 2-Phenyl-4:5-*cis*-diphenyl-4:5-dihydroimidazole**. See Amarine.
- 2-Phenyl-4:5-*trans*-diphenyl-4:5-dihydroimidazole**. See *iso*Amarine.
- Phenyldiphenylene-ethylene**. See Benzylidenefluorene.
- Phenyldipiperonalosotriazone** (MINUNNI), A., i, 260.
- p*-Phenylenebis-2,5-dimethylpyrrole-3:4-dicarboxylic acid**, ethyl ester (BÜLOW), A., i, 690.
- m*-Phenylenediacetyl-dichloro- and -dibromo-amine** (MORGAN), T., 1203; P., 1900, 170.

- m*-Phenylenediamine, acyl derivatives, action of hypochlorous and hypobromous acids on (MORGAN), T., 1203; P., 1900, 170.
- 1-*mono*- and 1:5-*di*-chloro- and -bromo-, and their dibenzoyl and diacetyl derivatives (MORGAN), T., 1202; P., 1900, 170.
- 4-chloro-, its acyl derivatives and salts (COHN and FISCHER), A., i, 458.
- nitroso- (TÄUBER and WALDER), A., i, 566.
- Phenylenediamines, *m*- and *p*-, hydrochlorides of, colour reaction to distinguish (CUNTIASSE), A., ii, 57.
- o*-Phenylenediamine acetate, action of, on isatin (MARCHLEWSKI), A., i, 100.
- p*-Phenylenediamine-2:6-disulphonic acid (JUNGAHN and NEUMANN), A., i, 418.
- o*-Phenylenedioxydiacetic acid and ethyl ester, metallic and aniline salts, amide and anilide (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
- m*-Phenylenedioxydiacetic acid and its ethyl ester, metallic and aniline salts, amide, and anilide and 2:4:6-*tri*-nitro-derivative (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
- p*-Phenylenedioxydiacetic acid and its ethyl ester, metallic salts and anilide (CARTER and LAWRENCE), T., 1222; P., 1900, 152.
- Phenylene ditolyl diketone (LIMPRICHT), A., i, 598.
- Phenylerythrosazone, *p*-bromo- (BERTRAND), A., i, 377.
- Phenylethane. See Ethylbenzene.
- 1-Phenyl-4-*o*-ethoxybenzylidene-3-methyl-5-pyrazolone, its *m*- and *p*-ethoxy-, *p*-hydroxy-, *p*-methoxy and acetyl compounds (TAMBOR and ERNST), A., i, 364.
- β -Phenylethyl alcohol. See Benzylcarbinol.
- Phenylethylene. See Styrene.
- N*-Phenylethylene- ψ -carbamide and its salts (MENNE), A., i, 286.
- Phenylethylenehydrazine, reactions of (HISCHMANN), A., i, 251.
- Phenylethylene- ψ -thiocarbamide, its salts and its compound with phenylthiocarbimide (MENNE), A., i, 286.
- Phenylethyl-hydantioic acid and -hydantoin (MOUNEYRAT), A., i, 644.
- 1-Phenyl-3-ethyl-5-ketotriazole-4-carbamide (RUPE and LABHARDT), A., i, 258.
- β -Phenyl- α -ethylpropionic acid, ethyl ester (DIECKMANN), A., i, 624.
- Phenylformiminoethyl ether, action of heat on (WISLICENUS and GOLDSCHMIDT), A., i, 435.
- Phenylfulvene (THIELE), A., i, 299.
- Phenylfumaric acid, thio-, and its ethyl ester (RUHEMANN and STAPLETON), T., 1183; P., 1900, 168.
- 1-Phenyl-4-furfurylidene-3-methyl-5-pyrazolone (TAMBOR and LICINSKI), A., i, 364.
- 1-Phenyl-3-furfurylpyrazolone (SANDELIN), A., i, 305.
- Phenylglutaconimide, dicyano-. See 6-Hydroxy-4-phenyl- $\Delta^{3,6}$ -dihydropyridone, 3:5-dicyano-.
- Phenylglycine-*o*-carboxylic acid, action of ammonia and aniline on, and acetylation of (VORLÄNDER and WEISSBRENNER), A., i, 295.
- isomeric mono-esters of (VORLÄNDER and v. SCHILLING), A., i, 295.
- Phenylguanidine, *p*-chloroamino- (BUSCH), A., i, 27.
- γ -Phenylhydantoin, preparation of (MOUNEYRAT), A., i, 644.
- Phenylhydrazine, action of, on ethyl β -cyanophenylpyruvate (ERLENMEYER), A., i, 649.
- nitroso-, diazobenzene nitrate from (RÜGHEIMER), A., i, 532.
- Phenylhydrazines, action of, on thio-cyanoacetic acid (HARRIES and KLAMT), A., i, 413.
- α -acylated, action of, on the chloro-derivatives of quinones (McPHERSON and FISCHER), A., i, 411.
- β -acylated, action of carbamic chloride on (RUPE and LABHARDT), A., i, 258.
- 3-Phenylhydrazino-1-indonephenylhydrazone (SCHLOSSBERG), A., i, 665.
- Phenylhydrazinophenylethylenepicrazide (HISCHMANN), A., i, 251.
- Phenylhydrazoncarbodi-*p*-tolylamine, melting point and oxidation product of (SCHALI), A., i, 464.
- Phenylhydrazones of dithiocarbonates (BUSCH and LINGENBRINK), A., i, 66, 411.
- Phenyl-*as*-*o*-hydroxybenzylhydrazine and its *m*-nitrobenzylidene derivative (BAMBERGER and MÜLLER), A., i, 706.
- Phenyl-*o*-hydroxybenzylidenemethylhydrazine (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- Phenyl-*o*- and -*p*-hydroxybenzylnitrosoamines (BAMBERGER and MÜLLER), A., i, 705.
- Phenylhydroxyhomocampholic acid (HALLER and MINGUIN), A., i, 452.

- 1-Phenyl-4-*p*-hydroxy-*m*-methoxybenzylidene-3-methyl-5-pyrazolone** and its acetyl and *mp*-dimethoxy compounds (TAMBOR and LICINSKI), A., i, 364.
- C-Phenylhydroxytriazole**, and *m*-nitro- and acetyl derivatives (YOUNG and WITHAM), T., 224; P., 1900, 5.
- Phenyl δ dimine** (VAUBEL), A., i, 522.
- Phenyliminodiphenylacetic acid** (HENZE), A., i, 119.
- Phenyliminophenyltetrazolone** and its acetyl derivative (BUSCH and BAUER), A., i, 415.
- 3-Phenylimino-2-*p*-tolyl-7-methyl-dihydrophenotriazine** and **-phenotriazine** and its salts (BUSCH and HARTMANN), A., i, 59.
- Phenylindoxyl**, attempted synthesis of (HENZE), A., i, 119.
- 2-Phenylketonaphthatriazine** and its reactions (BUSCH and HARTMANN), A., i, 60.
- 1-Phenyl-4-ketopyrazoline**, and its **3-carboxylic acid**, and **5-isonitroso-**(WOLFF), A., i, 692.
- 1-Phenyl-4-keto-5-pyrazolone** and its **3-carboxylic acid** and **5-phenylhydrazone** (WOLFF), A., i, 692.
- 1-Phenyl-5-ketotriazole-4-carbamide**, and its **3-methyl** and **3-ethyl** derivatives (RUPE and LABHARDT), A., i, 258.
- Phenyl meconinmethyl ketone** and its salts and methyl derivative (FULDA), A., i, 36.
- Phenyl mercaptan** (BOURGOIS), A., i, 163.
- condensation of, with ethyl acetylenedicarboxylate and with ethyl phenylpropiolate (RUHEMANN and STAPLETON), T., 1181; P., 1900, 168.
- action of phosphoryl chloride on (AUTENRIETH and RUDOLPH), A., i, 570.
- Phenylmesityliodonium hydroxide** and salts (WILGERODT and ROGGAZT), A., i, 433.
- α -Phenyl-3-methoxycinnamic acid**, **2-nitro-** and **2-amino-** (PSCHORR and JAECKEL), A., i, 488.
- α -Phenyl-*p*-methoxycinnamonitrile**, *p*-chloro- (v. WALTHER and WETZLICH), A., i, 438.
- Phenylmethylacetylene** (NEF), A., i, 350.
- Phenylmethylacridinium hydroxide** and cyanide (HANTZSCH and KALB), A., i, 114.
- Phenylmethylacridol** as a pseudo-base (HANTZSCH and KALB), A., i, 114.
- Phenylmethylbutanonoic acid**. See **β -Benzoyl- α -methylpropionic acid**.
- Phenylmethyleyanamide** (TRAUBE and v. WEDELSTÄDT), A., i, 389.
- 1-Phenyl-*mp*-methylenedioxybenzylidene-3-methyl-5-pyrazolone** (TAMBOR and LICINSKI), A., i, 364.
- α -Phenylmethylenedioxybenzylidene-*p*-chloro-** (v. WALTHER and WETZLICH), A., i, 438.
- as*-Phenylmethylethylisocarbamide** (STIEGLITZ and MCKEE), A., i, 340.
- 1-Phenyl-4-methyl-3-ethyl-5-ketotriazole** (RUPE and LABHARDT), A., i, 259.
- Phenylmethylfulvene** (THIELE), A., i, 299.
- 5-3-Phenylmethyl- Δ^2 -cyclohexenone** (SCHIFF), A., i, 40.
- Phenylmethylhydantoin** (MOUNEVAT), A., i, 644.
- 1-Phenyl-3-methyl-5-ketotriazole-4-carbamide** (RUPE and LABHARDT), A., i, 258.
- 2-Phenyl-3-(or 5)-methyl-4-*p*-nitrobenzeneazo-5-(or 3)-phenylpyrazole**, *p*-nitro- (BÜLOW), A., i, 66.
- Phenylmethylnitrosoamine**, *mono-p*- and **2:4-di-nitro-** (BAMBERGER and MÜLLER), A., i, 218.
- Phenylmethyloxazole disulphide** (VAILLANT), A., i, 239.
- Phenylmethylpyrazole disulphide** (VAILLANT), A., i, 239.
- 1-Phenyl-3-methylpyrazole** and its chloro-, bromo-, nitro-, and amino-derivatives, and their salts (MICHAELIS and BEHN), A., i, 693.
- p*-bromo-, and its chloro-, bromo-, nitro-, and amino-derivatives and their salts (MICHAELIS and SCHWABE), A., i, 695.
- 1-Phenyl-5-methylpyrazole** (BÜLOW and SCHLESINGER), A., i, 57; (STOLZ), A., i, 252.
- 1-Phenyl-3-methylpyrazole-Bz-*p*-carboxylic acid** (**3-methylpyrazole-1-*p*-benzoic acid**), and its **5-chloro-** and **5:4-chlorobromo-** (MICHAELIS and SUDENDORF), A., i, 696.
- 1-Phenyl-5-methylpyrazole-3:4-dicarboxylic acid**, and its ethyl ester and salts (BÜLOW and SCHLESINGER), A., i, 56; (STOLZ), A., i, 252.
- 1-Phenyl-3-methylpyrazolone**, *p*-bromo-, and its **4-anisylidene**, **4-benzylidene**, and **4-salicylidene** derivatives (MICHAELIS and SCHWABE), A., i, 695.
- o*- and *m*-nitro- (MICHAELIS and BEHN), A., i, 693.

- 1-Phenyl-4-methyl-3- and -5-pyrazolones and their acetyl and benzylidene derivatives (FICHTER, ENZENAUER, andUELLENBERG), A., i, 312.
- 1-Phenyl-3-methylpyrazoloneazobenzeneazoacetoacetic acid, ethyl ester (BÜLOW), A., i, 261.
- 2-Phenyl-4-methylquinoline, *o*-amino-. See *o*-Flavaniline.
- 2-Phenylnaphthalene, 2'-amino- (GRAEBE and HÖNIGSBERGER), A., i, 506.
- Phenylnaphthaphenazonium chloride, amino-. See *iso*Rosinduline, No. 8. salts, amino- (KEHRMANN and FLATTOFF), A., i, 60.
- 7-Phenylnaphthaphenazonium salts, 10-nitro- and 10-amino-, behaviour of, to amines (KEHRMANN and VALENTIEN), A., i, 255.
- 12-Phenylisonaphthaphenazonium 12-bromide and 7-Phenylnaphthaphenazonium 7-bromide, 2-amino- (*isrosindulines* 10 and 11) (KEHRMANN and WOLFF), A., i, 463.
- Phenylnaphthatriazine (FICHTER and SCHIESS), A., i, 366.
- 7-Phenylnaphthazonium salts, 7-chloro- (FISCHER and HEPP), A., i, 462.
- Phenyl- α -naphthylformazylbenzenes (FICHTER and SCHIESS), A., i, 366.
- Phenyl- α -naphthylodonium hydroxide and salts (WILGERODT and SCHLÖSSER), A., i, 283.
- 3-(or 5)-Phenyl-4-*p*-nitrobenzeneazo-5-(or 3)-methyl-*isooxazolone*- and -pyrazolone (BÜLOW), A., i, 66.
- Phenyl-*o*-, -*m*-, and -*p*-nitrobenzylidenemethyl- and -ethylhydrazines (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- α -Phenyl-*o*-, -*m*-, and -*p*-nitrocinnamonnitriles, *p*-chloro- (v. WALTHER and WETZLICH), A., i, 438.
- iso*Phenylnitromethane. See Toluene, ω -*isomono*-.
- Phenylactohydro-xanthenedione, and *p*-nitro- (VORLÄNDER and STRAUSS), A., i, 100.
- Phenylsazones and their *p*-bromo-derivatives, purification of and estimation of their rotatory power (NEUBERG), A., i, 139.
- 5-Phenylisooxazolone (RUHEMANN and STAPLETON), T., 247; P., 1900, 12.
- Phenylparaconic acids, isomeric (FITTING), A., i, 397.
- Phenylphenanthraphenofluorindine and its hydrochloride (KEHRMANN and STOFFEL), A., i, 255.
- 2-Phenylphenol, 4-amino- and 4-nitro- (HILL), A., i, 392.
- 3-Phenylphenotriazine (FICHTER and SCHIESS), A., i, 366.
- Phenyl phthalidemethyl ketone and its salts and methyl derivative (FULDA), A., i, 36.
- Phenylpropionic acid, ethyl ester, action of benzamidine, of hydroxylamine, of thiocarbamide and of guanidine on (RUHEMANN and STAPLETON), T., 239; P., 1900, 11.
- condensation of, with guaiacol and with phenyl mercaptan (RUHEMANN and STAPLETON), T., 1181; P., 1900, 168.
- action of phenols on (RUHEMANN and BEDDOW), T., 984, 1119; P., 1900, 123, 165.
- Phenylpropionic acid, *p*-cyano-, and its hydrolysis (MOSES), A., i, 659.
- α -Phenyl-*p*-isopropylcinnamonnitrile, *p*-chloro- (v. WALTHER and WETZLICH), A., i, 438.
- Phenylpropylcyanamide (v. BRAUN), A., i, 431.
- Phenylisopropylcyanamide (v. BRAUN), A., i, 642.
- 3-Phenylpurine, and its salts and chloro- and iodo-derivatives (FISCHER and v. LOEBEN), A., i, 697.
- Phenylpyridine chloride, *dinitro*-, (VONGERICHTEN; SPIEGEL), A., i, 51.
- Phenylpyruvic acid, β -cyano-, ethyl ester, action of phenylhydrazine and of hydroxylamine on; and its oxime (ERLENMEYER), A., i, 649.
- 3-Phenylquinoline, *p*-nitro-2-amino- and 2-amino- (PSCHORR and WOLFES), A., i, 170.
- 4-Phenylquinoline derivatives from cinchona alkaloids (KÖNIGS), A., i, 245.
- 2-Phenylquinone (HILL), A., i, 392.
- Phenylrhannosazone, *p*-nitro- (FEIST), A., i, 569.
- Phenylrosindulines, chloro-derivatives of (FISCHER and HEPP), A., i, 462.
- Phenylstyrene, thio- (RUHEMANN and STAPLETON), T., 1182; P., 1900, 168.
- Phenylsulphon-acetic and -propionic acids, velocity of the reaction of bromine on (RAMBERG), A., ii, 717.
- Phenyltartramic acid, ethyl ester (TINGLE), A., i, 544.
- Phenyltetramethylactohydro-xanthenedione (VORLÄNDER and STRAUSS), A., i, 100.
- Phenylthiazoline, 2-*p*-bromo-, and its 5-methyl derivative and their salts (SAULMANN), A., i, 687.
- Phenylthiocarbamic acid, alkyl esters (ORNDORFF and RICHMOND), A., i, 156.

- Phenylthiocarbamide**, change in the solubility of, by the addition of salts (ROTHMUND), A., ii, 467.
- Phenyl*di*thiocarbazine acid**, esters, formation of (BUSCH and LINGENBRINK), A., i, 413.
- esters and salts of, acid hydrolysis of (BUSCH and LINGENBRINK), A., i, 66, 411.
- Phenylthiocarbimide** (*phenyl isothiocyanate*) as a reagent for the detection of the alcoholic hydroxyl group (ORNDORFF and RICHMOND), A., i, 156.
- action of, on dibasic acids (BÉNECH), A., i, 340.
- action of, on *o*-aminoazotoluene (BUSCH and HARTMANN), A., i, 59.
- action of, on carpine and cytisine (LITTERSCHEID), A., i, 516.
- reactions of, with imino ethers (WHEELER and SANDERS), A., i, 563.
- Phenylthiocarbazine acid**, esters of, molecular rearrangement of, and their benzoyl derivatives (WHEELER and BARNES), A., i, 564.
- Phenylthionine** and its salts (SCHAPOSCHNIKOFF), A., i, 524.
- Phenylthiosulphonacetacetic acid**, ethyl ester (TROEGER and EWERS), A., i, 495.
- Phenyl-*p*-tolenylaminoxime**, dinitro- (WERNER and HERBERGER), A., i, 58.
- Phenyl-*p*-tolylidonium** hydroxide, iodide, and bromocamphorsulphonate (KIPPING and PETERS), P., 1900, 62.
- Phenyltolylmethane**, *p*-cyano-, and **Phenyltolylmethane-*p*-carboxylic acid** (MOSES), A., i, 659.
- Phenyl-*p*-tolylthiocarbamide**, and the action of chloroacetone on (v. WALTHER and STENZ), A., i, 569.
1. **Phenyl-4:4:6-trimethyldihydropyrimidine**, 2-amino- (TRAUBE and SCHALL), A., i, 118.
2. **Phenyl-4:4:6-trimethyldihydropyrimidine** (TRAUBE and SCHWARZ), A., i, 117.
3. **Phenyl-1:4:6-trimethyluric acid** (FISCHER), A., i, 417.
- β-Phenyluraminocrotonic acid**, ethyl ester, and its isomeride (BEHREND and MEYER), A., i, 287.
- Phenylurazine** and its triacetyl derivative, and compound with benzaldehyde, and its conversion into phenylurazole (BUSCH and HEINRICHS), A., i, 314.
- Phenylurethane** from phenol and mercuric fulminate (SCHOLL and KACER), A., i, 218.
- Phenyluric acids** and the action of methyl iodide on (FISCHER), A., i, 417.
- Phenylxylylethane**, distillation of, under pressure (KRAEMER and SPILKER), A., i, 617.
- Phloretic acid**, identity of, with hydro-*p*-conmaric acid (BOUGAULT), A., i, 495.
- Phloridzin**, action of, on muscle (LEE and HARROLD), A., ii, 558.
- Phloridzin diabetes**, influence of, on lactation (LUSK), A., ii, 558.
- Phloroglucinol** from the fusion with alkali of colouring matters from tannins (PERKIN), T., 424; P., 1900, 45.
- purification of (FRAPS), A., i, 645.
- ethyl ether (HERZIG and AIGNER), A., i, 545.
- methyl ether and its diacetyl, dibenzoyl, and tribromo-derivatives (HERZIG and AIGNER), A., i, 545.
- nitroso-derivatives of (WEIDEL and POLLAK), A., i, 290.
- dimethyl ether, action of a nitrite and acetic acid on (WEIDEL and POLLAK), A., i, 290.
- Phloroglucinols**, homologous, condensation of, with salicylaldehyde (WEIDEL and WENZEL), A., i, 308.
- bromo-derivatives (HERZIG, POLLAK, and ROHM), A., i, 595.
- Phloroglucinolcarboxylic acid**, methyl and ethyl esters (HERZIG and WENZEL), A., i, 176.
- Phorone**, action of amidines on (TRAUBE and LORENZ), A., i, 116.
- Phosphates**. See under Phosphorus and Agricultural Chemistry.
- Phosphatic deposits** in Japan (TSUNETO), A., ii, 43.
- Phosphine**. See Hydrogen phosphide.
- Phosphometer** (JOLLES), A., ii, 311.
- Phosphor-copper**, analysis of (BORN-TRÄGER), A., ii, 689.
- Phosphorescence** produced by radium radiations (BECQUEREL), A., ii, 126.
- of inorganic substances (GOLDSTEIN), A., ii, 702.
- of phosphoric oxide (EBERT and HOFFMANN), A., ii, 517.
- Phosphoric esters** (CAVALIER), A., i, 75; (CAVALIER and PROST), A., i, 579.
- Phosphorite** from N. Germany (KOERT), A., ii, 734.
- Phosphorites** from Sweden (ANDERSSON and SAHLBOM), A., ii, 148.
- Phosphorochalcite** (*ehlite*) from near Wiesbaden (PETERSEN), A., ii, 662.

- Phosphorus**, preparation of, free from arsenic (NÖLTING and FEUERSTEIN), A., ii, 722.
 supposed transformation of, into arsenic and antimony (WINKLER), A., ii, 476; (FITTICA), A., ii, 651; (NÖLTING and FEUERSTEIN), A., ii, 722.
 in muscle (MACLEOD), A., ii, 92.
 in paranuclein from casein (JACKSON), A., ii, 606.
 metabolism of (NOËL-PATON, DUNLOP, and AITCHISON), A., ii, 222; (LEIPZIGER), A., ii, 223.
- Phosphorus pentabromide**, supposed allotropism of (KASTLE and BRATTY), A., ii, 538.
- Phosphoryl bromide**, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.
- Phosphorus pentachloride**, molecular weight of (ODDO and SERRA), A., ii, 74.
 action of water and of phosphoric oxide on (ODDO), A., i, 92.
- Phosphoryl chloride**, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.
 action of, on aromatic amines and on phenyl mercaptan, in presence of alkali (AUTENRIETH and RUDOLPH), A., i, 570.
 action of water, of potassium chlorate, of aniline, and of phenol on (ODDO), A., i, 92.
- Thiophosphoryl chloride**, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.
- Pyrophosphoryl chloride**, preparation of (ODDO), A., i, 92.
- Phosphorus**, lower oxides of (MICHAELIS and PITSCH), A., ii, 137; (BESSON), A., ii, 539.
- Phosphoric oxide**, phosphorescence of (EBERT and HOFFMANN), A., ii, 517.
 new compounds of, with benzene (GIRAN), A., i, 146.
- Phosphoric acid**, behaviour of, in presence of saturated solutions of calcium hydrogen carbonate (SCHLÆSING), A., ii, 541, 618.
 double compounds of aromatic aldehydes and esters with (RAIKOW), A., i, 602.
 estimation of, by molybdate (HANAMANN), A., ii, 311.
 estimation of, as phosphomolybdic oxide (SHERMAN and HYDE), A., ii, 757.
 estimation of, in basic slags (HERZFELD), A., ii, 243, 367.
- Phosphorus**:—
- Phosphoric acid**, soluble, Wagner's reagent for the estimation of, in basic slag (CASALI), A., ii, 311.
 available, estimation of, in soil (PAGNOUL), A., ii, 167.
 estimation of, in soil, by the humic acid method (HOFFMEISTER), A., ii, 244.
 available as plant food, estimation of, in soils and manures (PLOT), A., ii, 510.
 available, estimation of, in manure (VEITCH), A., ii, 166.
 See also Agricultural Chemistry.
- Phosphate solutions**, metallic, electrolysis of (FERNBERGER and SMITH), A., ii, 109.
- Phosphates**, natural, estimation of alumina and ferric oxide in (VEITCH), A., ii, 577.
 See also Agricultural Chemistry.
- Metaphosphoric acid**, identity of, with plasmic acid (ASCOLI), A., i, 128.
- Metaphosphates** (v. KNORRE), A., ii, 651.
- Superphosphate**, bone, detection of adulterations of (LASNE), A., ii, 167, 311.
- Phosphorous acid**, a general property of (VANINO), A., ii, 138.
- Phosphotungstic acid** as a test for potassium (WÖRNER), A., ii, 370.
- Phosphorus trisulphide**, preparation of (SPRINGER), A., ii, 399.
- Phosphorus**, detection and estimation of:—
 detection of free (MUKERJI), A., ii, 756.
 apparatus for the estimation of (SHIMER), A., ii, 50.
 estimation of, by Reed's method (GERHARDT), A., ii, 108.
 apparatus for the clinical estimation of, in blood (JOLLES), A., ii, 311.
 estimation of, in coal and coke (CAMP), A., ii, 756.
 estimation of, in organic compounds (MARIE), A., ii, 108.
 estimation of, in ores, pig-iron, and steel containing arsenic (CAMP), A., ii, 757.
 estimation of, in steel, etc. (IBBOTSON and BREARLEY), A., ii, 757.
- Phosphoryl-anilide**, *p*-phenetide, and *p*-toluidide, thio- (AUTENRIETH and RUDOLPH), A., i, 570.
- Phosphoryl-bromotoluidide**, *p*-chloro-anilide, and *p*-phenetide and its nitro-derivative (AUTENRIETH and RUDOLPH), A., i, 570.
- Phosphoxyanilides** (ODDO), A., i, 92.

PHOTOCHEMISTRY :—

Light, chemical action of, compared with the chemical effects of the silent electric discharge (BERTHELOT), A., ii, 329.

influence of, on the electrical properties of metals (BUISSON), A., ii, 519.

oxidation and hydration of organic compounds under the influence of (BERTHELOT), A., i, 3.

sensitiveness of lead and silver to (WATERHOUSE), A., ii, 585.

influence of, on the action of chlorine on metallic silver (v. CORDIER), A., ii, 343, 723.

action of, on nitrogen iodide (CHATTAWAY and ORTON), A., ii, 594.

influence of, on the hydrolysis of platinic chloride (KOHLEBAUSCH), A., ii, 408.

influence of, on the transformation of styrene to metastyrene (LE MOINE), A., i, 91.

Photochemical effects produced by the Hertzian radiating wire (TOMMASINA), A., ii, 519.

experiments on silver chloride and bromide (LUTHER), A., ii, 181.

Photographic action of minerals containing thorium and uranium (AFANASSIEFF), A., ii, 702.

developers, brazilin and hæmatoxylin as (LEPETIT), A., ii, 519.

Latent image, theory of the (LUTHER; AEGG), A., ii, 253; (ENGLISH), A., ii, 381.

Radiations from radium (BECQUEREL; VILLARD), A., ii, 381.

phosphorescence produced by (BECQUEREL), A., ii, 126.

effect of the magnetic field on (CURIE), A., ii, 126; (BECQUEREL), A., ii, 182, 183.

from thorium and uranium compounds (CURIE), A., ii, 81; (P. and S. CURIE; P. and S. CURIE and BÉMONT), A., ii, 82.

from uranium (BECQUEREL), A., ii, 518.

Radio-active substances (GIESEL), A., ii, 480.

new, from pitchblende (DEBIERNE), A., ii, 20, 350; (CURIE), A., ii, 81; (P. and S. CURIE; P. and S. CURIE and BÉMONT), A., ii, 82.

from thorium and its compounds (RUTHERFORD), A., ii, 351, 352.

from uranium ores (GIESEL), A., ii, 19.

from uranium residues, atomic weight of (CURIE), A., ii, 83.

PHOTOCHEMISTRY :—

Radio-active substances, spectrum of (DEMARÇAY), A., ii, 83.

radiation of (BECQUEREL), A., ii, 126.

rays from, influence of the magnetic field on (BECQUEREL), A., ii, 126.

See also Polonium and Radium.

Radio-active barium (v. LENGYEL), A., ii, 402; (GIESEL), A., ii, 480; (DEBIERNE), A., ii, 586.

atomic weight of (CURIE), A., ii, 83, 654.

Radio-activity of uranium (CROOKES), A., ii, 586.

produced in substances by the action of thorium compounds (RUTHERFORD), A., ii, 352.

Becquerel rays, chemical action of (P. and S. CURIE), A., ii, 125.

action of the magnetic field on (CURIE), A., ii, 126.

and Röntgen rays, fluorescence of metallic compounds under the influence of (BARY), A., ii, 330.

Cathode rays, electrical conductivity in gases traversed by (MCLENNAN), A., ii, 587.

Röntgen rays, chemical action of, on glass (VILLARD), A., ii, 125.

absorption of, by aqueous solutions of metallic salts (BLYTHSWOOD and MARCHANT), A., ii, 182.

velocity of the ions produced in gases by (ZELENY), A., ii, 787.

Polarisation :—

Rotation, conditions determining the stability of (LE BEL), A., ii, 462.

of *d*- and *l*-isoamarine and their acid tartrates (SNAPE) T., 784; P., 1900, 118.

of benzyldenecamphor (MINGUIN), A., i, 301.

of bornylamine salts, bornyloxamide, dibornyloxamide, and neobornylamine (FORSTER and HARTSMITH), T., 1152; P., 1900, 166.

of aromatic compounds of camphor (HALLER and MÜLLER), A., i, 182.

of alcoholic solutions of camphor, influence of the amount of water on (PARTHEIL and VAN HAAREN), A., i, 507.

of camphoroximeacetic acid and its salts (FORSTER and HARTSMITH), T., 1154; P., 1900, 166.

of *d*-erythrose and *d*-erythronic acid (RUFF and MEUSSER), A., i, 139.

of hydrindamine bromo- and chloro-camphorsulphonates and *cis*- π -camphanates (KIPPING), T., 884; P., 1900, 51.

PHOTOCHEMISTRY :—

- Rotation** of malic acid in the pure state and in solution (WALDEN), A., i, 11.
- of complex salts of malic and tartaric acids (ROSENHEIM and ITZIG), A., i, 135, 272.
- of methylethylphenacylsulphine *d*-bromocamphorsulphonates and picrates (SMILES), T., 1177; P., 1900, 168.
- of *d*-methylethylthetine platinochloride, *d*-camphorsulphonate, and *d*-bromocamphorsulphonate (POPE and PEACHEY), T., 1072; P., 1900, 12.
- of ψ -nitrocamphane (FORSTER), T., 258; P., 1900, 13.
- of phenylosazones (NEUBERG), A., i, 139.
- of pilocarpine, *isopilocarpine* and *pilocarpidine* and their salts (JOWETT), T., 480.
- of acetyl and phenacetyl derivatives of diethyl *d*-tartrate (MCCRAE and PATTERSON), T., 1096; P., 1900, 161.
- of sorbinose (SMITH and TOLLENS), A., i, 378.
- of starch (RODEWALD and KATTEIN), A., i, 477.
- of solutions of sucrose, influence of pressure on the (SIERTSEMA), A., ii, 329.
- variation of, with the temperature (SCHÖNROCK), A., i, 378.
- of active valeric acid (GUYE and ASTON), A., ii, 253.
- Magnetic rotation** in solutions of acids and salts, effect of concentration on (FORCHHEIMER), A., ii, 524.
- of the benzenoid hydrocarbons (PERKIN), T., 267; P., 1899, 237.
- of hexamethylene and *mono*- and *di*-chlorohexamethylene (PERKIN), T., 372; P., 1900, 44.
- Refraction** of metals (VAN AUBEL), A., ii, 125.
- of potassium chloride solutions (BENDER), A., ii, 461.
- of sodium tungstate solutions (PAWLEWSKI), A., ii, 400.
- of mixtures (PERKIN), T., 280; P., 1899, 237.
- of tautomeric substances (BRÜHL), A., i, 497.
- of aromatic compounds of camphor (HALLER and MULLER), A., i, 182.
- of ethyl ether near the critical point (GALITZIN and WILIP), A., ii, 461.

PHOTOCHEMISTRY :—

- Refraction** of hydrocarbons with condensed benzene nuclei (CHILE-SOTTI), A., i, 339.
- of the benzenoid hydrocarbons (PERKIN), T., 267; P., 1899, 237.
- of hexamethylene and *mono*- and *di*-chlorohexamethylene (PERKIN), T., 372; P., 1900, 44.
- Dispersion** of tautomeric substances (BRÜHL), A., i, 497.
- of aromatic compounds of camphor (HALLER and MULLER), A., i, 182.
- Spectrographic method**, value of, in tautomerism (HARTLEY and DOBBIE), T., 498; P., 1900, 57.
- of determining the constitution of nitrogen compounds (BRÜHL), A., i, 210.
- Spectra** of stars, origin of certain unknown lines in the (LUNT), A., ii, 585.
- of liquids in the ultra-red (PUCCI-ANTI), A., ii, 585.
- of gases, influence of slight impurities on (LEWIS), A., ii, 1, 701.
- of ammonia, methylamine, hydroxylamine, acetaldoxime and acetoxime (HARTLEY and DOBBIE), T., 318; P., 1900, 14.
- of argon, new lines in the (NASINI, ANDERLINI, and SALVADORI), A., ii, 181.
- of bromine (EDER and VALENTA), A., ii, 330.
- of chlorine (EDER and VALENTA), A., ii, 72.
- of hydrogen and of water vapour (TROWBRIDGE), A., ii, 701.
- luminescence, of the rare earths (MUTHMANN and BAUR), A., ii, 544.
- new, of the rare earths (DEMARÇAY), A., ii, 656.
- of solutions of didymium and erbium salts, effects of dilution, temperature, etc., on (LIVEING), A., ii, 517.
- of gadolinium magnesium nitrate (DEMARÇAY), A., ii, 597.
- of neodymium and praseodymium (MUTHMANN and STÜTZEL), A., ii, 18.
- of samarium (DEMARÇAY), A., ii, 404.
- of a radio-active substance (DEMARÇAY), A., ii, 83.
- of radium (DEMARÇAY), A., ii, 83, 586; (RUNGE), A., ii, 641.
- of silicon (LOCKYER), A., ii, 181.
- of vanadium (HASSELBERG), A., ii, 381.

PHOTOCHEMISTRY:—

- Spectra** of benz-*anti*- and -*syn*-aldoximes (HARTLEY and DOBBIE), T., 509; P., 1900, 58.
- of 2:5-dimethylpyrazine (HARTLEY and DOBBIE), T., 846; P., 1900, 129.
- of ethyl dibenzoylsuccinates (HARTLEY and DOBBIE), T., 498; P., 1900, 57.
- of hexamethylene and tetrahydrobenzene (HARTLEY and DOBBIE), T., 846; P., 1900, 129.
- of methylfurfuraldehyde and of vegetable products (WIDTSON and TOLLENS), A., i, 244.
- of *o*-oxycarbanil and its ethers (HARTLEY, DOBBIE, and PALIATSEAS), T., 839; P., 1900, 130.
- of chlorophyll and its colouring matters (MARCHLEWSKI and SCHUNCK), T., 1080; P., 1900, 148.
- of the colouring matters of leaves (SCHUNCK), A., ii, 37.
- of hæmatoporphyrin (ARNOLD), A., i, 127.
- of bromohæmatoporphyrin and bromophylloporphyrin (MARCHLEWSKI and SCHUNCK), T., 1093.
- lamps for (BECKMANN), A., ii, 701.
- Spectrometer scale reader**, improved (PERKIN), T., 291.
- Photography**. See under Photochemistry.
- Photomethæmoglobin**. See under Hæmoglobin.
- Phototropy** (MARCKWALD), A., ii, 2; (BILTZ), A., ii, 125.
- See also Colour.
- Phrenosin**. See Cerebrin.
- Phthalaldehyde** and its tetracetate and dioxine and *iso*Phthalaldehyde tetracetate (THIELE and WINTER), A., i, 501.
- o*-**Phthalaldehydic acid**, compound of, with *o*-hydroxydiphenylacetic hydrazide (WEDEL), A., i, 363.
- Phthalanil**, 3:6-dichloro- (GRAEBE and GOUREVITZ), A., i, 547.
- Phthalic acid**, *dichloro*-, commercial, purification of (GRAEBE), A., i, 546.
- 3:6-dichloro- and its esters (GRAEBE), A., i, 546, 547; (GRAEBE and GOUREVITZ), A., i, 547.
- iso***Phthalic acid**, *diamino*-, quinoneimide of (NIETZKI and PETRI), A., i, 486.
- tetramino*-, formation of (NIETZKI and PETRI), A., i, 487.
- p*-**Phthalic acid**. See Terephthalic acid.
- Phthalide-di- and -tri-carboxylic acids**, synthesis of (DOEBNER), A., i, 499.
- Phthalidedimethyl ketone** and its salts and methyl derivative (FULDA), A., i, 36.
- Phthalimide**, bromo- and chloro-, conversion of, into acetylanthranil and isatoic anhydride (BREDT and HOF), A., i, 229.
- 3:6-dichloro- (GRAEBE and GOUREVITZ), A., i, 547.
- Phthalonic acid** and its imide and **Phthalonamic acid** (GABRIEL and COLMAN), A., i, 360.
- Phthaloylphthalic acid**, anhydride and imide (LIMPRICHT), A., i, 600.
- Phthaloyltoluoylbenzoic acid** (LIMPRICHT), A., i, 600.
- Phthalylaminoacetic acid**, ethyl ester, action of sodium alkyl oxides on (GABRIEL and COLMAN), A., i, 358.
- Phthalyliminoacetone-amymercaptopole**, diamyldisulphone, -benzylmercaptopole, -dibenzyldisulphone, -phenylmercaptopole, and -diphenyldisulphone (POSNER and FAHRENHORST), A., i, 17.
- Phthalyliminoketones**, transformations of (GABRIEL and COLMAN), A., i, 689.
- α*-**Phthalylimino-propionic** and -**butyric acids**, ethyl esters, action of sodium alkyl oxides on (GABRIEL and COLMAN), A., i, 358.
- Phyllades** from the Ardennes (READE and HOLLAND), A., ii, 150.
- Phylloporphyrin**, action of bromine on (MARCHLEWSKI and SCHUNCK), T., 1091; P., 1900, 149.
- Phyllorubin** (MARCHLEWSKI), A., i, 404.
- Phylloxanthin** (BODE), A., i, 109.
- Physical properties** and atomic weights (SANDER), A., ii, 137; (BAYLEY), A., ii, 188.
- Physical reactions**, and the mass law (LINCOLN), A., ii, 392.
- Physico-chemical reaction**, the driving tendency of, and its temperature coefficient (RICHARDS), A., ii, 533.
- Physiological action** and chemical constitution, relation between (PADERU), A., ii, 742.
- of acetonechloroform (*chlorctone*) (ALDRICH and HOUGHTON), A., ii, 358.
- of acetonedicarboxylic and citric acids (SABBATANI), A., ii, 32.
- of alkaloids of the Boraginæ (GREIMER), A., i, 684.
- of alkylated alkaloids in relation to their chemical constitution (ROSENSTEIN), A., ii, 294.
- of anagryne and cytosine (SCHMIDT), A., i, 513.
- of antipyrine (LAWROFF), A., ii, 741.

Physiological action of Wakamba arrow poison (BRIEGER), A., i, 248.
 of bromine (FESSEL), A., ii, 227.
 of caffeine (KRÜGER), A., ii, 30, 93; (KATSUYAMA, KUWAHARA, and SENO), A., ii, 94; (BOCK), A., ii, 424.
 of carbohydrates (ROSENFELD), A., ii, 358; (CHARRIN and GUILLEMONAT), A., ii, 606; (MÜNCH), A., ii, 607.
 of cheiranthin and cheirinine (REEB), A., i, 186.
 of chrysarobin and its oxidation product (MARFORI), A., i, 554.
 of creatine and creatinine (MALLET), A., ii, 156.
 of 3-cyano-1:2:3:4-tetramethylpyridone (SABBATANI), A., ii, 94.
 of drugs (FRÄNKEL), A., ii, 423.
 of formaldehyde (BRUNI), A., ii, 359.
 of extracts of sympathetic ganglia (CLEGHORN), A., ii, 557.
 of the poison of the Gila monster (VAN DEUBURG and WIGHT), A., ii, 677.
 of glucosamine hydrochloride (OFFER and FRÄNKEL), A., ii, 294.
 of 8-hydroxyquinoline (ROST), A., ii, 154.
 of *o*-hydroxyquinolinesulphonic acid (BRAHM), A., ii, 95.
 of iodine, sodium iodide and iodothylin (BARBÈRA), A., ii, 291.
 of japaconitine (DUNSTAN and READ), T., 53.
 of menthol and menthyl acetoacetate (COHN and TAUSS), A., i, 350.
 of *p*-mercuriodiphenylenetetraethylmercuridiammonium acetate (BENEDICENTI and POLLEDRO), A., ii, 359.
 of methylnitroamine, in relation to its constitution (SPRUYT), A., i, 142.
 of 1- and 4-methylxanthines (ALBANESE), A., ii, 424.
 of 4-methylxanthine (KRÜGER and SCHMIDT), A., ii, 31.
 of morphine (WINTERNITZ), A., ii, 221, 489; (IMPENS), A., ii, 228.
 of mucin (LEVIN), A., ii, 295, 555.
 of extracts of nervous tissues (HALLIBURTON; OSBORNE and VINCENT), A., ii, 423.
 of nicotine (WINTERBERG), A., ii, 424.
 of nitriles (FIQUET), A., ii, 424.
 of paraxanthine (KRÜGER and SCHMIDT), A., ii, 31.
 of pentane, cyclopentadiene, and valeraldehyde (ELFSTRAND), A., ii, 423.
 of phallin (KOBERT), A., ii, 156.
 of phloridzin (LEE and HARROLD; LUSK), A., ii, 558.
 of pilocarpine, isopilocarpine, and pilocarpidine (JOWETT), T., 497.

Physiological action of piperidinealkines (PADERI), A., ii, 742.
 of poisons (GUILLERY), A., ii, 95; (GIES and ASHER), A., ii, 291; (FRÄNKEL), A., ii, 423; (LINDEMANN), A., ii, 492; (WEDENSKI), A., ii, 739.
 of potassium chlorate (MELTZER), A., ii, 296.
 of protamines and their decomposition products (THOMPSON), A., ii, 227.
 of samandarine and of samandaridine sulphates (FAUST), A., i, 186.
 of soaps (MUNK), A., ii, 418.
 of Poehl's spennine (DIXON), A., ii, 676.
 of sugars (HÉDON and ARROUS), A., ii, 94.
 of tellurium compounds (GIES and MEAD), A., ii, 294.
 of theobromine (KRÜGER and SCHMIDT), A., ii, 31; (BOCK), A., ii, 424.
 of veratrine and protoveratrine (WALLER), A., ii, 425.
Physiology of the suprarenal capsules (BORUTTAU), A., ii, 225; (MOORE and PURINTON), A., ii, 492.
Phytosterol, retention of, in the organism, after feeding with cotton-seed oil (VIRCHOW), A., ii, 93.
 detection of, in fats (KREIS and RUDIN), A., ii, 252.
Picene, synthesis of (HIRN), A., i, 151.
Picotite from Steinegg, Austria (MRHA), A., ii, 218.
Picramic acid, dicyano- (4:6-dinitro-2-amino-3:5-dicyanophenol). See *iso*-Purpuric acid.
Picric acid (2:4:6-trinitrophenol), and its solutions, colour of (MARCKWALD), A., i, 391.
 oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.
Picryl acetate, action of diazomethane on (V. PECHMANN), A., i, 313.
Picryl chloride, improved method of preparing (JACKSON and GAZZOLO), A., i, 434.
 action of, on aromatic amines (WEDEKIND), A., i, 216.
 action of, on catechol (HILLYER), A., i, 289.
Picryl- α - and - β -naphthylamines (BAMBERGER and MÜLLER), A., i, 217.
Pigment, green, of *Amanita muscaria* (GRIFFITHS), A., ii, 235.
 of the *Arenicolæ* (FAUVEL), A., ii, 227.
 blue, of coral (LIVERSIDGE), A., i, 70.

Figs. See Agricultural Chemistry.

Pilocarpidine, constitution, properties and salts of (JOWETT), T., 473; P., 1900, 50.

Pilocarpine and *iso***Pilocarpine**, constitution, properties, reactions, salts and physiological action of (JOWETT), T., 473; P., 1900, 49.

Pilocarpine, constitution of (JOWETT), T., 494, 851; P., 1900, 50, 123; A., i, 686.

oxidation of, with permanganate (PINNER and KOHLHAMMER), A., i, 456, 685.

bromide derivatives, and oxidation of (PINNER and KOHLHAMMER), A., i, 456.

*iso***Pilocarpine**, oxidation of, with permanganate, and reactions of, with soda lime, fused caustic potash, and methyl iodide (JOWETT), T., 851; P., 1900, 123.

Pilocarposic acid, $C_{11}H_{16}O_5N_2$ (PINNER and KOHLHAMMER), A., i, 686.

Piluvic acid, $C_8H_{14}O_6$, and its salts (JOWETT), T., 855; A., i, 856; (PINNER and KOHLHAMMER), A., i, 685.

Pinacolin and its dioxime, and α -dibromo- and α -dichloro- (WITTORF), A., i, 422.

Pinacone formate (BÉHAL), A., i, 581.

Pinene, ψ - and ϕ -, formulæ of (SEMMLER), A., i, 453.

oxidation of (WALLACH and SCHÄFER), A., i, 241.

hydrochloride and hydriodide, relation of, to bornyl chloride and iodide (WAGNER and BRICKNER), A., i, 46.

Pinenol and its acetyl derivative (GENVRESSE), A., i, 351.

Pinenone and its oxime and acyl derivatives (GENVRESSE), A., i, 351.

i-**Pinocampholenic acid**, **Pinodihydrocampholenolactone**, *i*-**Pinonic** and *i*- and *l*-**Pinolic acids** (TIEMANN), A., i, 625.

Pinus Abies, cymene from (KLASON), A., i, 676.

Piperazine. See Diethylenediamine.

Piperidine (*hexahydropyridine*), action of, on α -benzoylaminocinnamic anhydride (ERLENMEYER), A., i, 550. action of bromoacetophenone on (SCHMIDT and HARTONG VAN ARK), A., i, 686.

action of diazotised amino-compounds on (WALLACH and TEWES), A., i, 264.

action of iodine on (SCHMIDT), A., i, 187.

Piperidine (*hexahydropyridine*) derivatives, synthesis of (GUARESCHI and GRANDE), A., i, 111; (MINOZZI), A., i, 407.

synthesis of, in the organism (HILDEBRANDT), A., ii, 676.

abnormal aurichloride of (FENNER and TAFEL), A., i, 111.

Piperidinealkines. See Hydroxyethylpiperidines.

Piperidyl-mono- and -diacetophenone and its salts (SCHMIDT and HARTONG VAN ARK), A., i, 686.

Piperonylacetone, nitro-, and its semicarbazone (ANGELI), A., i, 553.

Piperonylidene-*d*- and -*l*-camphor (HALLER), A., i, 301.

Piperylene nitrogen chloride (WILLSTÄTTER and IGLAUER), A., i, 458.

Pipitzahoic acid. See Perezone.

Pitchblende, radio-active substances from (DEBIERNE), A., ii, 20, 350; (CURIE), A., ii, 81; (P. and S. CURIE; P. and S. CURIE and BÉMONT), A., ii, 82.

Placenta and its ash, composition of the (GRANDIS), A., ii, 608, 609.

Plagioclase, composition of (TARASSENKO), A., ii, 354.

Plagioliparites of Cape Marsa (DUPARC and PEARCE), A., ii, 220.

Plane tree. See Agricultural Chemistry.

Plankton from Kiel Bay, composition of (BRANDT), A., ii, 609.

Plants, estimation of cell-wall constituents, hemicelluloses, and cellulose in (KLEIBER), A., ii, 630. See also Agricultural Chemistry.

Plasmic acid, identity of, with metaphosphoric acid (ASCOLI), A., i, 128.

Plasmolysis (VANDELDE), A., ii, 302.

Plasmon (PODA and PRAUSNITZ), A., ii, 289.

Platinum, influence of finely divided, on the combination of hydrogen and oxygen (FRENCH), A., ii, 718.

colloidal, as an inorganic ferment, and action of, on hydrogen peroxide (BREDIG and MÜLLER v. BERNECK), A., ii, 213.

commercial, cause of the loss of weight of, when heated under some conditions (HALL), A., ii, 659.

Platinum alloys with cadmium, magnesium and with zinc (HODGKINSON, WARING, and DESBOROUGH), A., ii, 282.

with gold, analysis of (PŘIWOZNIK), A., ii, 111.

Platinum compounds of hydroxylamine (UHLENHUTH), A., ii, 485, 659.

- Platinum tetrachloride** and its double salts (MIOLATI), A., ii, 214.
 hydrolysis of, on standing, and under the influence of light (KOHLRAUSCH), A., ii, 408.
- Tetrabromoplatinic acid** and **Pentachloroplatinic acid** and their salts (MIOLATI and BELLUCCI), A., ii, 732.
- Platinum organic compounds** :—
- Platinam** bases, constitution of (JÖRGENSEN), A., i, 542; (BIILMANN), A., i, 543.
- Platodiammineplatosemi-ethylene** and **-amine chlorides** (JÖRGENSEN), A., i, 542.
- Platosemiallyl alcohol chloride**, compounds of, with potassium and with platodiamminechloride (BIILMANN), A., i, 543.
- Platosemi-amine** and **-ethylene**, compounds of, with ammonium, potassium and silver chlorides (JÖRGENSEN), A., i, 542.
- Platinum, estimation of** :—
 estimation of small quantities of, in gold (RÜSSLER), A., ii, 733.
- Platinum black** as a compressed powder, electrical conductivity of (STREINTZ), A., ii, 641.
 action of a mixture of benzene vapour and hydrogen on (LUNGE and AKUNOFF), A., i, 543.
- Platinum wires**, fused-in, protection for (PALMAER), A., ii, 8.
- Plumbogummite** (HARTLEY), A., ii, 600.
- Plumieride**, identity of, with agoniadin (FRANCHIMONT), A., i, 680.
- Poisoning** by arsenic, rôle of leucocytes in (BESREDKA), A., ii, 156.
 detection of conine in cases of (VITALI and STROPPA), A., ii, 639.
 detection of nitroprussides in cases of (VENTUROLI), A., ii, 174.
 detection of opium in cases of (MECKE), A., ii, 180.
- Poisons**, chemical behaviour of, in the organism (FRÄNKEL), A., ii, 423.
 effect of, on eye muscles (GUILLERY), A., ii, 95.
 action of certain, on the kidneys (LINDEMANN), A., ii, 492.
 influence of, on the properties of nerve (WEDENSKI), A., ii, 739.
 protoplasmic, influence of, on lymph formation (GIES and ASHER), A., ii, 291.
- Polarisation**. See Electrochemistry and Photochemistry.
- Polonium** (GIESEL), A., ii, 20.
 from pitchblende (P. and S. CURIE), A., ii, 82.
- Polonium rays**, action of the magnetic field on (CURIE), A., ii, 126.
 existence of, doubtful (v. LENGYEL), A., ii, 402.
 See also Radio-active substances under Photochemistry.
- Polyaspartic acids** (SCHIFF), A., i, 279.
- Polymethylenes**, cyclic, from Russian petroleum (WISCHIN), A., i, 146.
- Polyprene** (WEBER), A., i, 354.
- Polysaccharides**, hydrolysis of (ŠULC), A., ii, 395.
- Pomegranate root**, alkaloid $C_9H_{17}ON$ from (PICCININI), A., i, 110.
- Pomegranates**, Java, amount of alkaloids in (BECKURTS), A., ii, 563.
- Poplar bud oil** (FICHTER and KATZ), A., i, 108.
- Potassammonium**, action of, on arsenic (HUGOT), A., ii, 14.
- Potassium**, in the red corpuscles of the blood of animals (BOTTAZZI and CAPPELLI), A., ii, 225.
- Potassium amalgams** (KURNAKOFF), A., ii, 277; (GUNTZ and FÉRÉE), A., ii, 540; (KERP and BÖTTGER), A., ii, 656.
- Potassium salts**, isomorphous, crystallography of (CORIO), A., ii, 593.
 solubility curves of mixtures of (TOUREN), A., ii, 396, 530, 646.
- Potassium aluminates** (ALLEN and ROGERS), A., ii, 727; (HERZ), A., ii, 728.
 antimonide, arsenide, bismuthide and stannide, preparation of (LEBEAU), A., ii, 276.
 carbonate, solubility of solutions of, in aqueous ammonia (NEWTN), T., 775; P., 1900, 87.
 influence of the medium on the heat of solution of (GALITZKI), A., ii, 66.
- chlorate**, electrolytic formation of (BROCHET), A., ii, 205, 276, 541.
 electrolytic reduction of (VOEGE), A., ii, 185.
 explosion of (BERTHELOT), A., ii, 139.
 action of, on phosphoryl chloride (ODDO), A., i, 92.
 decomposition products of (SODEAU), T., 142; P., 1899, 157.
 toxicology of (MELTZER), A., ii, 296.
- perchlorate**, estimation of, in alkali nitrates (BLATTNER and BRASSEUR), A., ii, 755.
 chloride, refraction of solutions of (BENDER), A., ii, 461.
 electrolysis of (BROCHET), A., ii, 205, 276.

- Potassium** chloride, electrical conductivity of solutions of (KOHLRAUSCH and MALTBY), A., ii, 61.
dissociation and dissociation equilibrium of (JAHN), A., ii, 522.
absorption of, from aqueous solution, by colloidal stannic oxide (VAN BEMMELEN and KLOBBIE), A., ii, 338; (VAN BEMMELEN), A., ii, 466.
and sodium chloride solutions, relationship between the composition of (WILSON), A., ii, 285.
compounds of, with acetylene and cuprous chlorides (CHAVASTELON), A., i, 470.
compounds of, with manganese chlorides (MEYER and BEST), A., ii, 77.
fluoride, compound of, with uranyl fluoride, and the action of hydrogen peroxide on (LORDKIPANIDZÉ), A., ii, 658.
fluorohyperborate (MELIKOFF and LORDKIPANIDZÉ), A., ii, 138, 139.
telluriodates (WEINLAND and PRAUSE), A., ii, 399.
iodide, titration of (VINCENT), A., ii, 166.
estimation of (BARRIE), A., ii, 755.
mercuriodide, dissociation of (FRANÇOIS), A., ii, 142.
permanganate, alkaline, as an oxidising agent (DONATH and DITZ), A., i, 197.
action of, on hydrogen peroxide and on Caro's acid (v. BAEYER and VILLIGER), A., ii, 719.
permanganomolybdates and the salts with ammonium (FRIEDHEIM and SAMELSON), A., ii, 547.
nitrate, electrical conductivity of solutions of (KOHLRAUSCH and MALTBY), A., ii, 61.
influence of the medium on the heat of solution of (GALITZKI), A., ii, 66.
formation and transition of mixed crystals of sodium nitrate and (HISSINK), A., ii, 339.
comparative estimations of nitrogen in (v. WISSELL), A., ii, 685.
estimation of potassium perchlorate in (BLATTNER and BRASSEUR), A., ii, 755.
nitrite, presence of, in brown powder residue (SETON and STEVENSON), A., ii, 276.
and cyanide, explosiveness of a mixture of (VAN GEUNS), A., i, 636.
- Potassium** nitrite, decomposition of, by alcoholic sulphur dioxide (DIVERS and HAGA), T., 437, 687.
and nitrate, mixed, solubility of (DIVERS), P., 1900, 40.
palladous iodonitrite (ROSENHEIM and ITZIG), A., ii, 282.
Dipotassium sodium cobaltinitrite (ADIE and WOOD), T., 1076; P., 1900, 17.
Potassium selenoantimonites and thioantimonites and their double salts with metals (POUGET), A., ii, 84.
ammonium silicovanadiomolybdates (FRIEDHEIM and CASTENDYCK), A., ii, 484.
sulphate, test by freezing point determinations of the dissociation values of solutions of (ARCHIBALD), A., ii, 65.
absorption of, from aqueous solution by colloidal stannic oxide (VAN BEMMELEN and KLOBBIE), A., ii, 338; (VAN BEMMELEN), A., ii, 466.
sulphates, compounds of, with metallic sulphates (MALLET), T., 216; P., 1899, 227.
persulphate, action of, on cobalt salts (MAWROW), A., ii, 596.
chromium sulphate (PAGEL), A., ii, 349.
magnesium sulphate, hydrate of (VAN'T HOFF and KASSATKIN), A., ii, 284.
manganese sulphate (MEYER and BEST), A., ii, 78.
nitrito-hydroximidosulphates (DIVERS and HAGA), T., 432; P., 1900, 54.
sulphazotised salts, Frey's, identification and constitution of (DIVERS and HAGA), T., 440; P., 1900, 55.
hydrosulphides, sulphides and polysulphides (BLOXAM), T., 753; P., 1899, 146.
sulphite and thiosulphate, double, with silver and copper (ROSENHEIM and STEINHÄUSER), A., ii, 652.
hydrogen chloro-osmisulphite (ROSENHEIM), A., ii, 660.
sodium sulphites, non-existence of two isomeric (FRAPS), A., ii, 276.
- Potassium organic compounds**:—
cyanide and nitrite, explosiveness of a mixture of (VAN GEUNS), A., i, 636.
action of, on aliphatic aldehydes (KOHN), A., i, 205.
as a condensing agent (SMITH), A., i, 38.
cobaltocyanide, oxidation of, by atmospheric oxygen (MANCHOT and HERZOG), A., ii, 546.

Potassium organic compounds:—

- ferrocyanide, decomposition of, by sulphuric acid (ADIE and BROWNING), T., 150; P., 1899, 226.
 rhodicyanide (LEIDIE), A., i, 212.
 selenocyanide (MUTHMANN and SCHRÖDER), A., i, 479.
 thiocyanate in human saliva (MENDEL and SCHNEIDER), A., ii, 554.
 platosemiallyl alcohol chloride (BILLMANN), A., i, 543.
 platosemi-ethylene and -amine chlorides (JÖRGENSEN), A., i, 542.
 palladous oxalonitrite (ROSENHEIM and ITZIG), A., ii, 282.

Potassium, detection and estimation of:—

- detection of (BILLMANN), A., ii, 624.
 microchemical detection of (HUYSE), A., ii, 245.
 phosphotungstic acid as a test for (WÜRNER), A., ii, 370.
 estimation of, by phosphomolybdic acid (WAVELET), A., ii, 758.
 new method of estimating (ADIE and WOOD), T., 1076; P., 1900, 17.
 shortened method for estimating, in its salts (NEUBAUER), A., ii, 759.

Potatoes. See Agricultural Chemistry.**Potentials.** See Electrochemistry.**Powder**, brown, composition of the residue of burnt (SETON and STEVENSON), A., ii, 276.

smokeless, tests for stability of (HOITSEMA), A., ii, 55.

Pozzuolana, natural and artificial (GIORGIS and ALVISI), A., ii, 348, 545.**Praseodymium**, spectra of (MUTHMANN and STÜTZEL), A., ii, 18.

carbide, preparation and properties of (MOISSAN), A., ii, 726.

Pregnancy, effect of ingestion of alcohol during (NICLOUX), A., ii, 416.

increase of hepatic glycogen during (CHARRIN and GUILLEMONAT), A., ii, 292.

influence of extract of ovaries on the changes produced in nutrition during (CHARRIN and GUILLEMONAT), A., ii, 554.

Prehnite in metamorphosed limestone (LACROIX), A., ii, 604.

action of ammonium chloride on (CLARKE and STEIGER), A., ii, 414.

Prehnitic acid. See 1:2:3:4-Benzene-tetracarboxylic acid.**Prehnitic acid.** See 2:3:4-Trimethylbenzoic acid.**Pressure** and evaporation, relation between (HALL), A., ii, 9.**Propaldehyde**, heat of combustion and of formation of (BERTHELOT and DELÉPINE), A., ii, 334.

condensation of, with acetaldehyde (SCHMALZHOFFER), A., i, 626.

Parapropaldehyde, β -iodo- (CHARON and PAIX-SÉAILLES), A., i, 472.**Propane**, nitro-, secondary, action of alkalis on (DUNSTAN and GOULDING), T., 1266; P., 1900, 174.*cyclo*Propane. See Trimethylene.**Propanedicarboxylic acids.** See:—
Glutaric acid.

Methylsuccinic acid.

*cyclo*Propanedicarboxylic acid. See Trimethylenedicarboxylic acid.**Propanolmercury salts** (SAND and HOFMANN), A., i, 385.**Propenolmercury salts** (SAND and HOFMANN), A., i, 386; (HOFMANN and SAND), A., i, 619.**Propiolic acid**, iodo-, reactions of (NEF), A., i, 23.**Propionaldazine** (FRANKE), A., i, 213.**Propionamide**, α -dichlorothio- (TROEGER and EVERS), A., i, 210.**Propionic acid**, density of (v. HIRSCH), A., ii, 9.

estimation of, in acetic acid (MUSPRATT), A., ii, 375.

methyl ester, rate of hydrolysis of, at various temperatures (PRICE), A., ii, 528.

Propionic acid, β -chloro-, preparation of, and action of water on (DE BARR), A., i, 76. α -thiocyano-, esters of, formation and boiling points of (WHEELER and BARNES), A., i, 565.**Propionitrile** (*ethyl cyanide*), specific heat and heat of vaporisation of (LUGININ), A., ii, 334.*p*-Propionyl-acetanilide and -aniline (KUNCKELL), A., i, 664.**Propionylaceto- ψ -cumidide**, -*o*-toluidides, and -xylidide, bromo- (KUNCKELL), A., i, 664.**Propionylacetoneitrile** (HENRY), A., i, 538.**Propionylcarbinol** (HENRY), A., i, 538.**Propionyl-*o*-flavaniline** (CAMPS), A., i, 310.*p*-Propionylphenyl-carbamide, and -carbamic acid, ethyl ester (KUNCKELL), A., i, 665.**Propiophenonedicarboxylic acid** (LIMPRICHT), A., i, 600. **β -Propoxy- β -phenylacrylic acid**, α -cyano-, ethyl ester (HALLER and BLANC), A., i, 496.**Propyl phosphates**, *n*- and *iso*-, and their lead and barium salts (CAVALIER and PROST), A., i, 579.

- n*-Propyl isocyanide (WADE), P., 1900, 157.
- β*-isoPropylacrylic acid. See Hexenoic acid.
- isoPropylallylaniline and the action of cyanogen bromide on (V. BRAUN), A., i, 642.
- isoPropylamine abnormal aurichloride (FENNER and TAFEL), A., i, 111.
- β*-Propylsec.amylhydroxylamine and its hydrochloride (BEWAD), A., i, 631.
- Propylbenzenes, *n*- and *iso*-, refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
- 1-isoPropylbenzoxazole-4-carboxylic acid, ethyl ester (EINHORN), A., i, 441.
- isoPropylbenzylidenebis-2-methylindole (V. WALTHER and CLEMEN), A., i, 408.
- Propylisobutylamine and its salts (MARCKWALD), A., i, 143.
- isoPropyl butyl ketone and its oxime (NEF), A., i, 350.
- isoPropyl isobutyl ketone and its oxime and oxidation (PONZIO), A., i, 588.
- α*-isoPropylbutyric acid. See Heptoic acid.
- Propylcatechol, preparation of (DE-LANGE), A., i, 289.
- 4-isoPropylcoumarone (STOERMER), A., i, 653.
- Propylene, action of, on mercuric salts (SAND and HOFMANN), A., i, 385.
- Propylene glycol, biochemical oxidation of (KLING), A., i, 129.
- mercuric salts (HOFMANN and SAND), A., i, 618.
- β*-isoPropylglutaric acid (*hexamedicarboxylic acid*) (HOWLES, THORPE, and UDALL), T., 942; P., 1900, 115.
- β*-isoPropylheptane-*ε*-oleic acid, lactone of (V. BAEYER and VILLIGER), A., i, 133.
- 5-isoPropylheptanone-2-nitrile-7, and its isomeride (MAHLA and TIEMANN), A., i, 507.
- β*-Propyl-sec.- and -tert.-hexylhydroxylamines and their salts (BEWAD), A., i, 631.
- isoPropylideneacetone. See Mesityl oxide.
- isoPropylidenediethylsulphone. See Sulphonal.
- α*-isoPropylidene-*γ*-hexenoic acid (RUPE), A., i, 372.
- isoPropylketocoumarancarboxylic acid, ethyl ester (BISCHOFF), A., i, 397.
- β*-isoPropyllævulic acid from the oxidation of the keto-lactone, C₁₀H₁₆O₃ (SEMMLER), A., i, 240.
- Propylmalonic acid (*butanedicarboxylic acid*), bromo-, and *αδ*-dibromo-, synthesis with (WILLSTÄTTER), A., i, 405.
- p*-isoPropylphenoxy-acetal, and -aldehyde hydrate and its semicarbazone and thiosemicarbazone (STOERMER), A., i, 653.
- 4-*p*-isoPropylphenyldihydrodithiazine, 2:6-dicyano- (HELLSING), A., i, 518.
- β*-*p*-isoPropylphenyl-*α*-methylhydroacrylic acid, synthesis of; and its salts (GRIGOROWITSCH), A., i, 597.
- Propylisopropylaniline, and the action of cyanogen bromide on (V. BRAUN), A., i, 642.
- αα*-Propylisopropylsuccinic acids, *cis*- and *trans*- (*octanedicarboxylic acids*), preparation and properties of (BONE and SPRANKLING), T., 654; P., 1900, 71.
- isoPropylpyrrolidone (TAFEL and STERN), A., i, 558.
- isoPropylstilbene, and *p*-nitro- (V. WALTHER and WETZLICH), A., i, 438.
- isoPropylsuccinimide (TAFEL and STERN), A., i, 558.
- Prostatic secretion, properties of (CAMUS and GLEY), A., ii, 674.
- action of, on the liquid of the *vesiculae seminales* (CAMUS and GLEY), A., ii, 673.
- Protamine, a new—cycloptertine (MOR-KOWIN), A., i, 72.
- Protamines, classification of (KOSSEL and KUTSCHER), A., i, 466.
- and their decomposition products, physiological action of (THOMPSON), A., ii, 227.
- Proteids (*albuminoids*), classification of (KOSSEL and KUTSCHER), A., i, 466.
- coagulation temperature of (PAULI), A., i, 265.
- influence of nitrogenous substances on the heat-coagulation of (SPIRO), A., i, 615.
- reversible liquefaction of (TSVETT), A., i, 67.
- pressure filtration of (HARRIS), A., ii, 222.
- the condition of nitrogen in (HAUSMANN), A., i, 317.
- amount of nitrogen obtainable from, by acids (HENDERSON), A., i, 265.
- decomposition of, by acids (BOKORNY), A., i, 126.
- fermentative decomposition of (JACOBY), A., ii, 671.
- formation of alcohol in the putrefaction of, free from carbohydrates (VITALI), A., ii, 297.
- action of alcohol on (ROSEMANN), A., ii, 92, 356.
- first cleavage product of the action of alkali on (MAAS), A., i, 708.

Proteids (*albuminoids*), behaviour of, to alkaloid reagents (COHNHEIM and KRIEGER), A., ii, 778.
 digestion of, by pepsin and trypsin, influence of alcohols on (LABORDE), A., ii, 151.
 action of arginine on the tryptic digestion of (LAWROFF), A., ii, 28.
 fat from (PFLÜGER), A., ii, 91, 92.
 origin of glycogen from (SCHÜNDORFF), A., ii, 740.
 tyrosine from (REACH), A., i, 126.
 influence of, on animals (PFLÜGER), A., ii, 91.
 absorption of, after feeding on meat and plasmon (MICKO), A., ii, 422.
 rate of absorption and of assimilation of, during fasting (MOSSO), A., ii, 605.
 fate of, when introduced into the circulation (MUNK and LEWANDOWSKY), A., ii, 154.
 and flesh, energy-value of (PFLÜGER), A., ii, 417.
 feeding value of (PFLÜGER), A., ii, 91, 92.
 iodine number of (BLUM), A., i, 67.
 formation of, in plants (EMMERLING), A., ii, 612.
 influence of light on the production of, in plants (PALLADIN), A., ii, 612.
 insoluble in gastric juice, conditions of the production of, and their importance for the respiration of plants (PALLADIN), A., ii, 613.
 plant, regeneration of, from their products of decomposition (PRIANISCHNIKOFF), A., ii, 233.
 ion-, compounds (LOEB), A., ii, 227.
 in albuminuria, origin of the (CLOËTTA), A., ii, 155.
 of blood and lymph, action of lymphagogues on (TIMOFÉEFFSKY), A., ii, 95.
 of conifer seeds, decomposition products of (SCHULZE and WINTERSTEIN), A., ii, 101.
 of coniferous plants (SUZUKI), A., ii, 562.
 of cows' milk (STORCH), A., i, 266.
 of egg white, composition of (OSBORNE and CAMPBELL), A., i, 574.
 of egg yolk (OSBORNE and CAMPBELL), A., i, 616.
 of ovarian colloid (PANZER), A., i, 70.
 in the vegetative portions of plants (BOKORNY), A., ii, 426.
 of *Lupinus luteus* seedlings, decomposition products of (SCHULZE), A., ii, 101.

Proteids (*albuminoids*), coagulable, of connective tissues (GIES and RICHARDS), A., ii, 292.
 histon-like, from the thymus gland (FLEROFF), A., i, 71.
 of the wheat germ (OSBORNE and CAMPELL), A., i, 573.
 test for (LINTNER), A., ii, 631.
 modification of Ritthausen's method of estimating (BARNSTEIN), A., ii, 779.
 precipitation of (SCHJERNING), A., ii, 779.
 animal, detection of glutamic acid in, by sulphuric acid (KUTSCHER), A., i, 67.
 estimation of absorbable, in foods (BÜLOW), A., ii, 549.
 separation of, from flesh-bases (WILEY), A., ii, 122.

Proteids. See also :—

Albumins.
 Albuminin.
 Albumoses.
 Autipeptone.
 Casein.
 Caseinogen.
 Columbabin.
 Cystin.
 Edestin.
 Elastin.
 Fibrin.
 Globulin.
 Glucoproteids.
 Glutineptone.
 Hæmoglobins.
 Histon.
 Lecithin.
 Nucleins.
 Nucleons.
 Oxyprotein.
 Paranuclein.
 Peptones.
 Plasmon.
 Thymine.
 Vitellin.

Protoalbumose. See Albumose.

Protocatechuic acid (3:4-dihydroxybenzoic acid), thermal study of (MASSOL), A., i, 600.
 from the fusion with alkalis of certain colouring matters from tannins (PERKIN), T., 424; P., 1900, 45.
 ethyl ester, nitro- and amino- (EINHORN), A., i, 440.

Protopine (*macleyine*) (MURRILL and SCHLOTTERBECK), A., i, 686.

Protoveratrine, action of, on muscle and nerve (WALLER), A., ii, 425.

Pseudo-acids and their salts (FULDA), A., i, 36.
 characterisation of (HANTZSCH), A., i, 94.

- Pseudo-acids**, α -oximinoketones and quinoneoximes as (FARMER and HANTZSCH), A., i, 103.
- Pseudo-bases**, azonium bases as (HANTZSCH and KALB), A., i, 114. diazohydroxides as (ENGLER and HANTZSCH), A., i, 566.
- Pseudo-ammonium bases and salts** (HANTZSCH and KALB), A., i, 113. transformation of colour-bases into (HANTZSCH and OSSWALD), A., i, 256.
- Pseudo-cyanides** (HANTZSCH and KALB), A., i, 114; (HANTZSCH and OSSWALD), A., i, 256.
- Pseudodiazonium compounds**, diazo-compounds as (HANTZSCH), A., i, 126.
- Pseudo-nuclein**, comparison of natural and artificial (GIERTZ), A., i, 71.
- Pseudo-salts**, characteristics of (HANTZSCH and KALB), A., i, 557. diazocyanides as (HANTZSCH), A., i, 567.
- Pseudosulphonic acids**, transformation of colour-bases into (HANTZSCH and OSSWALD), A., i, 257.
- Pseudo-terpenes**, -terpene alcohols, and -terpene ketones (SEMMLER), A., i, 453.
- Ptomaine**, resembling aconitine, from a corpse (MECKE), A., ii, 120.
- Pulegone** and α - and β -*isopulegone* (HARRIES and ROEDER), A., i, 182.
- Pulegone**, oxidation of (MARKOWNIKOFF), A., i, 475. metabolism during poisoning with (LINDEMANN), A., ii, 223. reactions of (KLAGES), A., i, 44.
- Pump**, water vacuum, modification of the (ITTNER), A., ii, 718.
- Purine bases**, estimation of, in blood and animal organs (HIS and HAGEN), A., ii, 769. derivatives, a quantitative reaction of (JOLLES), A., ii, 454, 636. separation of, from urea (KRÜGER and SCHMIDT), A., ii, 31. substances, rôle of, in human metabolism (BURIAN and SCHUR), A., ii, 489.
- iso***Purpuric acid**, constitution of (NIETZKI and PETRI), A., i, 485.
- Metapurpuric acid**, constitution of (BORSCHKE), A., i, 645.
- Pycnometer**, new (GÜCKEL), A., ii, 193.
- Pyocyanin**, the blue colouring matter of *Bacillus pyocyaneus* (BOLAND), A., i, 70.
- Pyramidone** (*dimethylaminodimethylpyrazolone*), reactions of (HOFFMANN), A., ii, 379.
- Pyrazole-3:5-dicarboxylic acid** (GRAY), A., i, 376.
- Pyrazoledimethylenedinitrophenol** (v. PECHMANN), A., i, 313.
- Pyrazolinedimethylenepicryl acetate** (v. PECHMANN), A., i, 313.
- Pyridine**, action of, on bromoacetophenone (SCHMIDT and HARTONG VAN ARK), A., i, 687. action of sulphur dioxide and hydrogen sulphide on (ANDRÉ), A., i, 517. tellurium bromide and chloride (LENHER), A., i, 379. thori-chloride and -bromide (ROSENHEIM and SCHILLING), A., ii, 351. hydrochloride, double salt of, with bismuth chloride (HAUSER and VANINO), A., i, 641. tri- and tetra-thionates (ANDRÉ), A., i, 517. detection of (VONGERICHTEN), A., i, 51.
- Pyridine**, chlorine derivatives of, constitution of (SELL and DOOTSON), T., i, 233; P., 1899, 205; 1900, 9. chloroamino-derivatives of, constitution of (SELL and DOOTSON), T., 4, 233, 771; P., 1899, 206; 1900, 9, 111.
- Pyridineacetophenone** and its salts and oxime chloride (SCHMIDT and HARTONG VAN ARK), A., i, 687.
- Pyridinebetaine** and its basic hydriodide (ORTOLEVA), A., i, 558.
- Pyridine-4-carboxylic acid**. See *iso-Nicotinic acid*.
- Pyridinecarboxylic acids** (PINNER), A., i, 409.
- Pyridine-2:6-dicarboxylic acid** (PINNER; PINNER and LEWIN), A., i, 409.
- Pyridinium *penta*-bromo- and -chlorochromate** (PFEIFFER), A., i, 559.
- Pyridoyl acetic acids**, α -, β -, and γ -, ethyl esters (PINNER), A., i, 409.
- 2-Pyridyl mercaptan, methosulphide and sulphides** (MARCKWALD, KLEMM, and TRABERT), A., i, 456.
- Pyridyl-2-methylsulphone, -2-sulphonic acid, and -2-thioglycollic acid** (MARCKWALD, KLEMM, and TRABERT), A., i, 456.
- Pyrites**, composition and heat of combustion of (CAVAZZI), A., ii, 598. estimation of pyrrhotite in (CARPENTER), A., ii, 763. estimation of sulphur in (HEIDENREICH), A., ii, 310.
- Pyrogallolsulphonic acid** and its salts (DELAGE), A., i, 595.
- Pyrographitic acid**, insoluble (STAUDENMAIER), A., ii, 15.
- Pyrojoapaconine**, preparation, properties and aurichloride of (DUNSTAN and READ), T., 62; P., 1899, 207.

- Pyrojapaconitine**, preparation, properties, hydrolysis, and salts of (DUNSTAN and READ), T., 60 ; P., 1899, 207.
- Pyrolusite** from Moravia (KOVÁŘ), A., ii, 147.
- Pyromeconic acid**, constitution of (PERATONER and LEONARDI), A., i, 550.
- Pyromucic acid**, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76 ; P., 1899, 224.
- iso***Pyromucic acid** (SIMON), A., i, 198.
- Pyromucomethylamide** (WHEELER and ATWATER), A., i, 294.
- α -Pyrone- α' -carboxylic acid** (LAPWORTH), P., 1900, 132.
- Pyrope** from Steinegg, Austria (MRHA), A., ii, 218.
- Pyrophyllite** from North Carolina (CLARKE and STEIGER), A., ii, 24.
from Westana, Sweden (WEIBULL), A., ii, 286.
- Pyrotartaric acid**. See Methylsuccinic acid.
- n*-**Pyrotartaric acid**. See Glutaric acid.
- iso***Pyrottritic acid** (SIMON), A., i, 624.
feric salt, as an indicator (SIMON), A., i, 625.
- Pyroxene**. See Augite.
- Pyrrhotite** (*magnetic pyrites*), estimation of, in pyrites ore (CARPENTER), A., ii, 763.
- Pyrrrole-2-aldehyde** and **Pyrrrolealdoxime** (BAMBERGER and DJIERDJIAN), A., i, 309.
- 2-Pyrrolidinecarboxylic acid** and the action of methylamine on (WILLSTÄTTER), A., i, 405.
- Pyrrolidone** and its mercury and bromo-derivatives (TAFEL and STERN), A., i, 557.
- Pyrroline-2-carboxylic acid** (BAMBERGER and DJIERDJIAN), A., i, 309.
hydrazide of (PICCININI and SALMONI), A., i, 562.
- 2-Pyrrroyl-azoimide** and **-hydrazide** (PICCININI and SALMONI), A., i, 562.
- 2-Pyrrylurethane**, and its nitroso- and acetyl-derivatives (PICCININI and SALMONI), A., i, 562.
- Pyruvamide**, oxime of (WHITELEY), T., 1045 ; P., 1900, 145.
- Pyruvic acid**, mercury salts and derivatives of (LEY), A., i, 382.
benzylhydrazones of (CURTIUS), A., i, 611.
4-quinaldylhydrazone of (MARCKWALD and CHAIN), A., i, 522.
- Pyruvoglycollic acid**, phenylhydrazone of (WOLFF and HEROLD), A., i, 585.
- Q.
- Quartz**, solubility of, in sodium silicate solutions (SPEZIA), A., ii, 595.
- Quassia**, distinguishing between hops and (CHAPMAN), A., ii, 380.
- Quercetin** from various tannin matters (PERKIN), T., 423 ; P., 1900, 45.
- 4-Quinaldyl-hydrazine**, and **-phenylthio-semicarbazide** (MARCKWALD and CHAIN), A., i, 521.
- Quinizarin**, bromine-derivatives of (LIEBERMANN and RIEBER), A., i, 451.
- Quinobis- α -oxy-propionic, -butyric**, and **-isovaleric acids** (BISCHOFF), A., i, 446.
- Quinol**, $C_{13}H_7O_4Cl_5$, from trichloroguaiacol and nitric acid (COUSIN), A., i, 487.
- Quinol** (1:4-*dihydroxybenzene*), condensation of the disodium derivative of, with esters of α -bromo-fatty acids (BISCHOFF), A., i, 446.
chloro-, diacetyl derivative of (THIELE and WINTER), A., i, 504.
o-dicyano- (THIELE and MEISENHEIMER), A., i, 299.
- Quinolacetic acid**. See *p*-Hydroxy-phenoxyacetic acid.
- Quinoline** derivatives, action of aldehydes on (KOENIGS), A., i, 189.
abnormal aurichloride (FENNER and TAFEL), A., i, 111.
hydrochloride, double salt of, with bismuth chloride (HAUSER and VANINO), A., i, 641.
methiodide (MARCKWALD and MEYER), A., i, 519.
tellurium bromide and chloride (LENHER), A., i, 379.
- Quinoline**, 6-amino-, and its acetyl, benzoyl and thionyl derivatives (KNUEPPEL), A., i, 187.
- iso***Quinoline** derivatives, formation of (GABRIEL and COLMAN), A., i, 358.
1-*mono*- and 1:4-*di*-chloro-, and its tetrahydride (GABRIEL and COLMAN), A., i, 358.
- 4-Quinolinealdehyde** (KOENIGS), A., i, 246.
- Quinoline-phenol, -phenetole** and its **dicarboxylic acid** (KOENIGS), A., i, 247.
- Quinolinic acid**, esterification of (KIRPAL), A., i, 51.
- 2-Quinolones**, nitro-, preparation of (DECKER), A., i, 689.
- 2-Quinolylhydrazine** and its derivatives and its compounds with ethyl oxalate (MARCKWALD and MEYER), A., i, 519.
- 6-Quinolylhydrazine** (KNUEPPEL), A., i, 188.

2-Quinolyl-phenylthiosemicarbazide and -semicarbazide (MARCKWALD and MEYER), A., i, 520.

Quinone, $C_{10}H_6O_4Cl_2$, from trichloroguaiacol and nitric acid (COUSIN), A., i, 487.

Quinone, production of, by *Streptothrix chromogena* (BEYERINCK), A., ii, 425.

addition of hydrogen cyanide to (THIELE and MEISENHEIMER), A., i, 299.

o-Quinone, tetra-bromo- and -chloro-, from tetra-bromo- and -chloro-guaiacol and -veratrol (COUSIN), A., i, 179, 487.

Quinonedioximes, action of nitrogen peroxide on (OLIVERI-TORTORICI), A., i, 553.

Quinones, action of acetic anhydride and sulphuric acid on (THIELE and WINTER), A., i, 504.

from benzene, estimation of, volumetrically (VALEUR), A., ii, 57.

Quinones, chloro-derivatives of, action of α -acylated phenylhydrazines on (McPHERSON and FISCHER), A., i, 411.

Quinones, list of. See Ketones and Quinones.

Quinoneacetylphenylhydrazone (McPHERSON), A., i, 123.

Quinonehydrazones, constitution and derivatives of (FARMER and HANTZSCH), A., i, 122.

Quinonoximes, stereochemistry of (KEHRMANN and KRÜGER), A., i, 180.

as pseudo-acids (FARMER and HANTZSCH), A., i, 103.

Quinopyridines, constitution and nomenclature of (WILLGERODT), A., i, 610.

Quinoquinoline, anhydrous chloride of, phototrophy of (MARCKWALD), A., ii, 2.

Quinosol, composition of (ROST), A., ii, 154.

See also *o*-Hydroxyquinolinesulphonic acid.

Quinoxalidoneacetic acid, ethyl ester (RUHEMANN and STAPLETON), T., 243; P., 1900, 12.

6-Quinylurethane (KNEUPEL), A., i, 188.

R.

Racemic acid. See under Tartaric acid.

Racemic amino-acids, resolution of, into optically active components (FISCHER), A., i, 172, 646; (FISCHER and MOUNEYRAT), A., i, 647.

Racemic compounds, some (SCHLOSSBERG), A., i, 376.

and stereoisomerides (COOPER), A., ii, 269.

characterisation of (ROOZEBOOM), A., ii, 64, 70, 132; (BRUNI), A., ii, 269; (ADRIANI), A., ii, 462.

resolution of, into their active components (WALDEN), A., i, 7; (MARCKWALD and MCKENZIE), A., i, 207.

resolution of, into active components, by means of enzymes (FISCHER), A., i, 140.

resolution of, by means of moulds (ULPIANI and CONDELLI), A., ii, 493.

Racemisation occurring during the formation of benzylidene, benzoyl, and acetyl derivatives of *d*-ac-tetrahydro- β -naphthylamine (POPE and HARVEY), P., 1900, 74.

of optically active tin compounds (POPE and PEACHEY), P., 1900, 116.

Radiations and Radio-activity. See Photochemistry.

Radium (GIESEL), A., ii, 19.

existence of, doubtful (v. LENGUEL), A., ii, 402.

from pitchblende (P. and S. CURIE and BÉMONT), A., ii, 82.

radiations from (VILLARD), A., ii, 381.

transparency of aluminium to (BECQUEREL), A., ii, 381.

spectrum of (DEMARÇAY), A., ii, 83, 586; (RUNGE), A., ii, 641.

electric charge of the deviable rays of (P. and S. CURIE), A., ii, 254.

effect of the magnetic field on rays of (CURIE), A., ii, 126; (BECQUEREL), A., ii, 182, 183.

phosphorescence produced by radiations from (BECQUEREL), A., ii, 126.

behaviour of, at low temperatures (BEHRENDSEN), A., ii, 587.

See also Radio-active substances under Photochemistry.

Raffinose (*melitose*, *melitriose*), nutritive value of, for *Aspergillus niger* (GILLOT), A., ii, 99.

Rain-water. See under Water.

Ransätite (WEIBULL), A., ii, 287.

Rape cake. See Agricultural Chemistry.

Rat, growing, decrease of water in the central nervous system of the (DONALDSON), A., ii, 556.

Rate of substitution of a nitro-group by an alkoxy (DE BRUYN), A., i, 146.

Rathite from the Binnenthal (SOLLY and JACKSON), A., ii, 599.

Rays. See Photochemistry.

- Realgar.** See Arsenic sulphide.
- Receiver** for fractional distillation in a vacuum (FOGETTI), A., ii, 535.
- Reductor**, a simplified (SHIMER), A., ii, 50.
- Refraction.** See Photochemistry.
- Resin oil**, distillation of, under pressure (KRAEMER and SPILKER), A., i, 617.
- Resin** from acetone, isoamyl nitrite and hydrogen chloride (KISSEL), A., i, 621.
(rosin), properties of (SMETHAM and DODD), A., ii, 377.
- Resins**, natural (BAMBERGER and LANDSTEDL), A., i, 48; (BAMBERGER and VISCHNER), A., i, 605.
examination of (DIETERICH), A., ii, 118.
- Resins.** See also :—
Abietoresen.
Ambrite.
Ammoniacum.
Anime.
Bdellium.
Canadoreesen.
Caranna.
Dammar.
Galbanum.
Labdanum.
Lariciresinol.
isoLariciresinol.
Mastic.
Opoponax.
Sagapenum.
Sandarac.
Storax.
Tacamahaca.
Turpeth.
- Resorcinobis- α -oxy-propionic, -butyric, and -isovaleric acids** and their ethyl esters (BISCHOFF), A., i, 446.
- Resorcinol**, action of cyanogen bromide on (SCHOLL and NÖRR), A., i, 436.
condensation of the disodium derivative of, with esters of α -bromo-fatty acids (BISCHOFF), A., i, 446.
methyl ether, preparation of (MERZ and STRASSER), A., i, 289.
- Resorcinol-acetic acid.** See *m*-Hydroxyphenoxyacetic acid.
- Resorcinol-*o*-azosalicylic acid** (ZAHN), A., i, 549.
- Resorcinol-1:3:5-tricarboxylic acid.** See Dihydroxytrimesic acid.
- Respiration**, action of the blood-gases on (PLAVEC), A., ii, 288.
action of morphine on (WINTERNITZ), A., ii, 221, 489; (IMPENS), A., ii, 228.
action of nicotine on (WINTERBERG), A., ii, 424.
- Respiration**, elimination of carbon dioxide during (GRANDIS), A., ii, 604.
in the frog (ATHANASIU), A., ii, 288.
of plants. See Agricultural Chemistry.
- Retene**, refraction of (CHILESOTTI), A., i, 339.
- Rhabarberone and Rhabarberohydroanthrone** (HESSE), A., i, 41; (LIEBERMANN), A., i, 355.
- Rhamninase** (C. and G. TANRET), A., i, 185.
- Rhamninose, Rhamnite and Rhamninotronic acid** (C. and G. TANRET), A., i, 78.
- Rhamninose and Rhamninotronic acid**, Tanret's, cryoscopy of (PONSOT), A., i, 333.
- Rhamnose**, oxidation of, by hydrogen peroxide (MORRELL and CROFTS), T., 1220; P., 1900, 171.
- Rhamnus cathartica*, constituents of the fruits of (TSCHIRCH and POLACCO), A., i, 681.
- Rhapontin** and its tetracetyl derivative (HESSE), A., i, 41.
- Rhein** and its diacetyl derivative (HESSE), A., i, 41; (LIEBERMANN), A., i, 355.
- Rhodoese**, a new sugar (VOTOČEK), A., i, 332.
- Rhodinal**, transformation of, into menthone (BOUVEAULT), A., i, 452.
- Rhodinol** (BOUVEAULT), A., i, 452.
- Rhodium**, behaviour of, in alloys with the noble metals (RÖSSLER), A., ii, 732.
sesquichloride (LEIDIÉ), A., ii, 146.
potassium cyanide (LEIDIÉ), A., i, 212.
- Rhubarb** and its active constituents (HESSE), A., i, 40; (TSCHIRCH), A., i, 185.
- Rhus Metopium*, constituents of (PERKIN), T., 427; P., 1900, 45.
- Ricinine** and its dibromide (EVANS), A., i, 309.
- Ricinoleic acid**, and its acetyl derivative, action of hydrogen bromide on (KASANSKY), A., i, 426.
- Ring compounds**, formation of, by elimination of aromatic nitro-groups (WERNER and HERBERGER), A., i, 57.
luminescence of (KAUFFMANN), A., i, 480.
- Ring disruption** and ring formation among terpene derivatives (WALLACH), A., i, 44, 589.
- Roasting apparatus**, laboratory (DROSSBACH), A., ii, 270.
- Robinia Pseudacacia*, constituents of (PERKIN), T., 430; P., 1900, 45.

- Rocks**, artificial production of (BAUER), A., ii, 26.
 application of the phase rule to (LE CHATELIER), A., ii, 197.
 corundum-bearing, of Eastern Ontario (MILNER), A., ii, 552.
 volcanic, Italian, composition of (WASHINGTON), A., ii, 27, 220.
 from Sumatra (MILCH), A., ii, 150.
 of Suzeava, composition of minerals from the (BUTUREANU), A., ii, 149.
 analysis of (WÜLFING), A., ii, 25.
- Rock analyses**, statement of (WASHINGTON), A., ii, 598.
- Röntgen rays**. See Photochemistry.
- Rosaniline bases**, coloured, and their colouring properties (v. GEORGIEVICS), A., i, 569.
- Rose blossoms**, occurrence of phenylethyl alcohol in (WALBAUM), A., i, 509, 645.
- Roses**, oil of (WALBAUM), A., i, 509.
 German (WALBAUM and STEPHAN), A., i, 677.
 benzylcarbinol from (v. SODEN and ROJAHN), A., i, 489.
- Rosindone**, chloro- and thio- (FISCHER and HEPP), A., i, 461.
- iso***Rosindone**, its oxime and salts, and the interaction of the chloride with aniline and the toluidines (FISCHER and HEPP), A., i, 461.
- Rosinduline** (FISCHER and HEPP), A., i, 460.
- Rosinduline** and *iso***Rosinduline**, action of tetramethyldiaminobenzhydrol on (MÖHLAU and SCHAPOSCHNIKOFF), A., i, 367.
- iso***Rosindulines**, eighth and ninth isomerides, isolation of, and their salts (KEHRMANN and FILATOFF), A., i, 60.
 tenth and eleventh isomerides of (KEHRMANN and WOLFF), A., i, 463.
- iso***Rosinduline leucauramine** and its salts (MÖHLAU and SCHAPOSCHNIKOFF), A., i, 367.
- Rubber wares**. See Caoutchouc.
- Rubeanic acid**. See Oxamide, *dithio*.
- Rubidium**, change of volume accompanying fusion of (ECKARDT), A., ii, 400.
- Rubidium amalgams** (KERF and BÖTTGER), A., ii, 656.
- Rubidium salts**, extraction of, from lepidolite (FORMÁNEK), A., ii, 15.
- Rubidium** hydrogen tetrafluoridate (WEINLAND and KÖPEN), A., ii, 139.
 telluridate (WEINLAND and PRAUSE), A., ii, 399.
- Rubidium persulphate** (MARSHALL), A., ii, 277.
 magnesium sulphate (MALLET), T., 223; P., 1899, 227.
 microchemical detection of (HUYSSÉ), A., ii, 245.
- Ruminants**. See Agricultural Chemistry.
- Ruthenium** and its compounds (ANTONY and LUCCHESI), A., ii, 659.
- Rye**. See Agricultural Chemistry.
- S.**
- Sabinene**, and its glycol and ketone, and **Sabinenic acid** (SEMMLER), A., i, 454.
- Sabinol** (FROMM), A., i, 402; (SEMMLER), A., i, 453.
- Sabinylglycerol** (SEMMLER), A., i, 453.
- Saccharic acid**, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 76; P., 1899, 224.
- "Saccharin"** (*o*-benzoic sulphinide), influence of, on digestion (BERLIOZ), A., ii, 606.
 detection of, in beer (RÖSSING), A., ii, 119.
 detection of, in food (TRUCHON), A., ii, 377; (DE BRÉVANS), A., ii, 635.
 detection of, in wines (VITALI), A., ii, 57.
- Saccharine liquids**, analysis of (HALPHEN), A., ii, 694.
- Saccharomyces mycoderma*, action of benzylthiocarbimide on (TER MEULEN), A., i, 511.
- Saccharose**. See Sucrose.
- Safflower oil**. See *Carthamus tinctorius*.
- Saffron**, colouring matter of (HILGER), A., i, 682.
- Safranine** (FISCHER and HEPP), A., i, 460.
 diazotisation of (JAUBERT), A., i, 315.
- Safranine colouring matters**, structure of (GREEN), A., i, 119.
- apo***Safranine** hydrobromide and *apo*-**Safranone** salts and oxime (FISCHER and HEPP), A., i, 460.
- Safranines**, formation of (HARDIN), A., i, 412; (CHARDIN), A., i, 610.
- Safrole**, action of iodine and mercuric oxide on (BOUGAULT), A., i, 641.
- iso***Safrole**, acid, $C_{10}H_{10}O_4$, from the oxidation of (BOUGAULT), A., i, 495.
- Sagapenum**, examination of (DIETERICH), A., ii, 118.
- Sainfoin**. See Agricultural Chemistry.
- St. Ignatius bean**, composition of the albumen of (BOURQUELOT and LAURENT), A., ii, 498.
- "Sake,"** chemical and biological researches on the preparation of (KOZAI), A., ii, 743.

- Salamander**, alkaloids from the (FAUST), A., i, 186.
- Salicylaldehyde**, action of liver-extracts on (MEDVEDEFF), A., ii, 738.
condensation of, with homologous phloroglucinols (WEIDEL and WENZEL), A., i, 308.
- Salicylaldehyde**, 3:5-dibromo-, acetyl derivatives of (SIMONIS and WENZEL), A., i, 496.
- Salicylaldehydophenylhydrazone**, oxidation of (MINUNNI and CARTA-SATTA), A., i, 260.
- Salicylanilinoacetic acid**. See *o*-Carboxyphenylglycollic acid anilide.
- Salicylhydramide**, metallic derivatives of (DELÉPINE), A., i, 177.
- Salicylic acid**, action of dry silver oxide and methyl iodide on (LANDER), T., 745; P., 1900, 6, 90.
mercury derivative of, and detection of, by Millon's reagent (LINTNER), A., ii, 631.
sodium salt, influence of, on metabolism (GOODBODY), A., ii, 670.
detection of, in presence of citric acid (LANGKOPF), A., ii, 695, 769; (CONRADY; GEROCK), A., ii, 769; (KLETT), A., ii, 770.
detection of, in milk (SÜSS), A., ii, 770.
cause of error in testing for, in wines (FERREIRA DA SILVA), A., ii, 695.
estimation of (MESSINGER), A., ii, 514.
estimation of, by ferric isopyrotritarate (SIMON), A., i, 625.
- Salicylic acid**, methyl ester, action of aniline and hydroxylamine on (TINGLE), A., i, 544.
phenyl ester. See Salol.
- esters of, reaction of, with amines (TINGLE), A., i, 641.
- Salicylic acid**, amino-, glycinyl derivatives of the esters of (EINHORN and OPPENHEIMER), A., i, 494.
3-amino-, derivatives of (ZAHN), A., i, 549.
m-nitro- (HILL, SOCH, and OENSLAGER), A., i, 538.
- α -Salicyloxy-propionic**, *n*- and *iso*-butyric, and *isovaleric* acids and their ethyl esters (BISCHOFF), A., i, 397.
- Salinigrin**, new glucoside from willow bark (JOWETT), T., 707; P., 1900, 89.
- Salipyrine**, metallic derivatives of constitution of (SCHUYTEN), A., i, 57; (BOURGEOIS), A., i, 193.
estimation of (BOUGAULT), A., i, 311.
- Saliva**, influence of acids on the amylolytic action of (HANFORD), A., ii, 666.
human, potassium thiocyanate in (MENDEL and SCHNEIDER), A., ii, 554.
- Salol**, action of amines, phenols, and sulphuric acid on (COHN), A., i, 548.
- Salt**, a, from Lake Djouvan-Tubé (MARKOWNIKOFF), A., ii, 660.
- Salts**, mixture of, having one common ion, solubility of (TOUREN), A., ii, 396, 530, 646.
acid, relation between taste and dissociation of (KAHLENBERG), A., ii, 270, 646; (RICHARDS), A., ii, 391.
fused, electrolysis of (LORENZ and HELFENSTEIN), A., ii, 333; (HELFENSTEIN), A., ii, 383; (QUINCKE; LORENZ), A., ii, 644.
solid and fused, relation between polarisation and current density in (GOCKEL), A., ii, 704.
solid, and their solution, difference of potential between (CAMPETTI), A., ii, 704.
inorganic, in non-aqueous solutions, electrical conductivity of (LINCOLN), A., ii, 6.
- Samandarine** and **Samandaridine** (FAUST), A., i, 186.
- Samarium** (DEMARÇAY), A., ii, 404.
oxide, crude, new element in (DEMARÇAY), A., ii, 481.
- Sand**, estimation of, in clays (CRONQUIST), A., ii, 171.
separation of, from clay in soils (SCARLATA), A., ii, 368.
- Sandalwood oil**, East Indian, constituents of (GUERBET), A., i, 242, 401; (v. SODEN; MÜLLER), A., i, 677.
West Indian, constituents of (v. SODEN), A., i, 401; (DEUSSEN), A., ii, 579.
- Sandarac resin**, examination of (DIETERICH), A., ii, 118.
- Sandmeyer's and Gattermann's reactions**, electrolytic modification of (VOTOČEK and ZENĚSEK), A., i, 19.
- Sandstone** concretions from West Cheshire (MOORE), A., ii, 150.
- Sanidine** from Monte Cimino, Rome (ZAMBONINI), A., ii, 603.
- Santalene**, **Santalols**, **Santalal**, **Santalal** acid from Bombay oil of sandalwood (GUERBET), A., i, 242.
- Santalenes**, α - and β - (GUERBET), A., i, 242, 401.
*iso*Santalenes, isomeric (GUERBET), A., i, 402.
- Santalol** from West Indian sandalwood oil (DEUSSEN), A., ii, 579.
- Santalols**, α - and β - (GUERBET), A., i, 242, 402; (v. SODEN), A., i, 677.
- Santalone** and its oxime from East Indian sandalwood oil (MÜLLER), A., i, 678.

- Santene**, C_9H_{14} , from East Indian sandalwood oil (MÜLLER), A., i, 678.
- Santonin acid**, and its dioxime and **Meta-santonin acid** (FRANCESCONI), A., i, 101.
- Santonin**, action of, on vision (FILEHNE), A., ii, 424.
estimation of (THAETER), A., ii, 122, 775; (KATZ), A., ii, 583.
- α -Santonin**, tribromo- (FRANCESCONI), A., i, 102.
- Saponification**, the theory of (LEWKOWITSCH), P., 1899, 190.
See also Hydrolysis.
- Saponite** from Moravia (KOVÁŘ), A., ii, 149.
- Sartorite** from the Binnenthal (SOLLY and JACKSON), A., ii, 599.
- Saturation sludge**, acids in (ANDRLÍK), A., ii, 679.
- Savin**, oil of, constituents of (FROMM), A., i, 402.
- Saw palmetto** (*sabal serrulatum*), fruit of (SHERMAN and BRIGGS), A., ii, 102.
- Schinoydase** from *Schinus molle*, and the function of iron in (SARTHOU), A., i, 575.
- Schizolite** from Greenland (WINTHER), A., ii, 413.
- Schröterite** from Saalfeld, Thuringia (ZAMBONINI), A., ii, 150.
- Scolecite**, action of ammonium chloride on (CLARKE and STEIGER), A., ii, 414.
- Scopolamine** (HESSE), A., i, 50; (GADAMER), A., i, 356.
- i*-Scopolamine**. See Atroscine.
- Sea urchin**, unfertilised eggs of, artificial production of normal larvæ from (LOEB), A., ii, 555.
- Sea water**. See under Water.
- Sea-weed**. See *Ulva latissima*.
- Selenite**, dehydration of (ZUNINO), A., ii, 479.
- Selenium**, allotropic forms of (SAUNDERS), A., ii, 650.
isomorphism of, with tellurium (NORRIS and MOMMERS), A., ii, 537.
dioxide, action of sodium thiosulphate on (NORRIS and FAY), A., ii, 272.
- Selenates**, double, of the type R_2M (SeO_4)₂.6H₂O, crystallography of (TUTTON), A., ii, 593.
- Selenotetrathionic acid**, sodium salt of (NORRIS and FAY), A., ii, 272.
- Selenium organic compounds**:—
- Selenium compounds**, cyano- (MUTHMANN and SCHRÖDER), A., i, 479.
- Selenium**, detection and separation of:—
test for, in sulphuric acid (SCHLAGDENHAUFFEN and PAGEL), A., ii, 342.
- Selenium**, separation of:—
separation of, from tellurium (CRANE), A., ii, 473; (KELLER), A., ii, 573.
- Selenoantimonites** (POUGET), A., ii, 84.
- Semicarbazinopropionic acid**, acyl derivatives of (BAILEY and ACREE), A., i, 528.
- Semicarbazones**, decomposition of (KIRPING), P., 1900, 63.
hydrolysis of (YOUNG and WITHAM), P., 1900, 73.
- Semicarbazylcamphoformenecarboxylic acids** (J. B. and A. TINGLE), A., i, 303.
- Seminase** (BOURQUELOT and HÉRISSEY), A., i, 320; ii, 35, 233.
- Senna leaves**, constituents of (TSCHIRCH and HIEPE), A., i, 681.
- Serpentine** from Silesia, nickel in (ASCHERMANN), A., ii, 86.
- Serum**, antidiaphtheric, granular deposit from (MAILLARD), A., i, 266.
antihæmatic (NOLF), A., ii, 741.
antihepatic (DELEZENNE), A., ii, 675.
antileucocytic, action of, on blood (DELEZENNE), A., ii, 423, 554.
hæmolytic (BORDET), A., ii, 741.
and red corpuscles (CANTACUZÈNE), A., ii, 741.
ox-, albumin in (HOUGARDY), A., i, 709.
- Serum-globulin**, solubility of, in water (MARCUS), A., i, 127.
- Sesamé oil**, constituents of (BÖMER and WINTER), A., ii, 178.
analysis of (UTZ), A., ii, 699.
Baudouin's test for (KERP), A., ii, 116.
colour tests for (BELLIER), A., ii, 117.
detection of, in butter (WEIGMANN), A., ii, 40; (SOHN), A., ii, 55; (KERP), A., ii, 116; (BREMER; SOLTSEN), A., ii, 325; (AMTHOR), A., ii, 453.
detection of, in margarine (BÖMER and WINTER), A., ii, 178; (BREMER; SOLTSEN), A., ii, 325; (AMTHOR), A., ii, 453.
- Sesamin**, properties of (BÖMER and WINTER), A., ii, 178.
- Sesquimethyleneasparagine** (SCHIFF), A., i, 85.
- Sesquiterpene** from oil of poplar buds (FICHTER and KATZ), A., i, 108.
- Sesquiterpenes** from citronella oil (SCHIMMEL and Co.), A., i, 184.
- Sewage effluents**, estimation of dissolved oxygen in (LETTS and BLAKE), A., ii, 755.
- Sheep**. See Agricultural Chemistry.
- Shells of Mytilus and Pinna**, organic substance of the (WETZEL), A., ii, 555.

- Shock**, surgical, use of alkaline solutions in (HOWELL), A., ii, 558.
- Silica**. See Silicon dioxide.
- Silicon**, spectrum of (LOCKYER), A., ii, 181; (LUNT), A., ii, 585.
amorphous, and its chloride and sulphide, preparation of (HEMPEL and v. HAAS), A., ii, 275.
- Silicon** borides, SiB_3 and SiB_6 , preparation and properties of (MOISSAN and STOCK), A., ii, 539.
tetrachloride, hydrolysis of (v. KOWALEWSKY), A., ii, 731.
dioxide (silica), expansion of fused (LE CHATELIER), A., ii, 539.
permeability of molten, to hydrogen (VILLARD), A., ii, 652.
estimation of, in chrome ore (TATE), A., ii, 313.
estimation of, colorimetrically, in mineral waters (SALVADORI and PELLINI), A., ii, 367.
- Silicates**, constitution and classification of (BUTUREANU), A., i, 285.
fused, solidification of, under high and normal pressure (OETLING), A., ii, 149.
- Silicovanadomolybdates** (FRIEDHEIM and CASTENDYCK), A., ii, 483.
- Silicon organic compounds**:—
Silico-phenylamide, -**diphenylimide**, and -**triphenylguanidine** (REYNOLDS), T., 836; P., 1900, 133.
- Silicon**, estimation of:—
estimation of, in ferro-chromium (TATE), A., ii, 313.
- Silver**, electrolytic deposition of, from non-aqueous solutions (KAHLBERG), A., ii, 521.
sensitiveness of, to light (WATERHOUSE), A., ii, 585.
electrochemical equivalent of (RICHARDS, COLLINS, and HEIMROD), A., ii, 256.
action of chlorine on, in the light and in the dark (v. CORDIER), A., ii, 343, 723.
reversible reaction between hydrogen chloride and (JOUNIAUX), A., ii, 139.
- Silver salts**, complex (HELLWIG), A., ii, 723.
action of sodium thiosulphate on (FAKTOR), A., ii, 691.
- Silver halogen salts**, solubility of (THIEL), A., ii, 521.
double, with ammonium thiosulphate (ROSENHEIM and STEINHÄUSER), A., ii, 653.
- Silver** bromide and chloride, photochemical experiments on (LUTHER), A., ii, 181.
- Silver** bromide, chloride and iodide, precipitated, equilibrium in (THIEL), A., ii, 521.
platosemiammine chloride (JÜRGENSEN), A., i, 542.
fluoride, electrochemical properties of (ABEGG and IMMERWAHR), A., ii, 256.
compound of, with ammonium fluoride (GRÜTZNER), A., ii, 541.
hydroxide, absorption of hydrogen by (COLSON), A., ii, 241.
nitrate, formation and transition of mixed crystals of sodium nitrate and (HISSINK), A., ii, 339.
formation and transformation of the double salts of thallium nitrate and (VAN EIJCK), A., ii, 403.
peroxynitrate (SULC), A., ii, 595.
oxide, action of acetylene on (GOOCH and BALDWIN), A., i, 74.
action of, on bromoamines (KIJNER), A., i, 277, 333, 629.
dry, and alkyl iodides, alkylation by means of (LANDER), T., 736; P., 1900, 6, 90.
peroxide, action of hydrogen sulphide on (VANINO and HAUSER), A., ii, 279.
peroxysulphate (MULDER), A., ii, 724.
sulphite and thiosulphate, double salts with the alkali metals (ROSENHEIM and STEINHÄUSER), A., ii, 652.
thioantimonites, double salts with alkali metals (POUGET), A., ii, 84.
- Silver organic compounds**:—
peroxyacetate (MULDER), A., ii, 724.
platosemi-ethylene chloride (JÜRGENSEN), A., i, 542.
- Silver**, detection and estimation of:—
detection of, by dimercurous ammonium chloride (LETEUR), A., ii, 246.
estimation of, volumetrically (ANDREWS), A., ii, 760.
estimation of, by Volhard's method (ROSE), T., 232; P., 1900, 5.
estimation of, on plated copper utensils (GIRARD), A., ii, 170.
- Silver** bullion, assay of (ROSE), T., 232; P., 1900, 5.
- Skin**, absorption of iodides by the (GALLARD), A., ii, 419.
- Slags**, basic, valuation of (DAFERT), A., ii, 167.
estimation of phosphoric acid in (HERZFELD), A., ii, 243, 367.
Wagner's reagent for the estimation of soluble phosphoric acid in (CASALI), A., ii, 311.
See also Agricultural Chemistry.

- Slates** (READE and HOLLAND), A., ii, 150.
- Soap emulsions**, nature of (DONNAN), A., ii, 201.
- Soaps**, action of, in the body (MUNK), A., ii, 418.
- absorption of, in the large intestine (HAMBURGER), A., ii, 418.
- analysis of (SHUKOFF and NOGIN), A., ii, 326.
- analysis of the fatty matter of (SMETHAM and DODD), A., ii, 377.
- estimation of free alkali in (DIVINE), A., ii, 759.
- estimation of total and free alkali and alkali carbonate in (HENRIQUES and MAYER), A., ii, 687.
- estimation of glycerol in (JEAN), A., ii, 694.
- glycerin-, estimation of sugar in (FREYER), A., ii, 373.
- estimation of the water-softening power of (RICHARDSON and JAFFÉ), A., ii, 326.
- Soda**, natural, from Egypt (SCHWEINFURTH and LEWIN), A., ii, 283.
- Sodium**, electrical effects produced during the evaporation of, in air and other gases (HENDERSON), A., ii, 588.
- in the red corpuscles of the blood of animals (BOTTAZZI and CAPPELLI), A., ii, 225.
- in cartilage (v. BUNGE), A., ii, 92.
- Sodium alloys** with bismuth, with cadmium, with lead, and with mercury, composition and melting points of (KURNAKOFF), A., ii, 277.
- Sodium amalgams** (KURNAKOFF), A., ii, 277; (GUNTZ and FÉREÉ), A., ii, 540; (KERP and BÖTTGER), A., ii, 656.
- Sodium aluminates** (ALLEN and ROGERS), A., ii, 727; (HERZ), A., ii, 728.
- antimonide, arsenide, bismuthide and stannide, preparation of (LEBEAU), A., ii, 276.
- biborate (borax), separation of boric acid from (BEYTHIEN and HEMPEL), A., ii, 313.
- carbonate, use of, in surgical shock (HOWELL), A., ii, 558.
- detection of, in milk (SÜSS), A., ii, 759.
- chloride, relationship between the composition of solutions of potassium chloride and (WILSON), A., ii, 285.
- electrolysis of (WOLF), A., ii, 382; (LORENZ and WEHRLIN), A., ii, 476.
- Sodium chloride**, electrical conductivity of solutions of (KOHLRAUSCH and MALTBY), A., ii, 61.
- dissociation and dissociation equilibrium of (JAHN), A., ii, 523, 707.
- viscosity of solutions of (HOSKING), A., ii, 336.
- poisonous character of (LOEB), A., ii, 227.
- changes in the composition of the blood after transfusion of (MAGNUS), A., ii, 665.
- influence of solutions of, injected subcutaneously, on proteid metabolism (KRUMMACHER), A., ii, 670.
- poisonous properties of, towards plants (COUPIN), A., ii, 236.
- fluoride, compound of, with uranyl fluoride, and the action of hydrogen peroxide on it (LORDKIPANIDZÉ), A., ii, 658.
- iodide, influence of, on the circulation (BARBERA), A., ii, 291.
- nitrate, electrical conductivity of solutions of (KOHLRAUSCH and MALTBY), A., ii, 61.
- formation and transition of mixed crystals of potassium nitrate and, and of silver nitrate and (HIS-SINK), A., ii, 339.
- estimation of potassium perchlorate in (BLATTNER and BRASSEUR), A., ii, 755.
- See also Agricultural Chemistry.
- nitrite, colour and physical properties of solutions of (BOGUSKI), A., ii, 75.
- cobalt nitrite, preparation of (BILMANN), A., ii, 624.
- and salt of, with potassium (ADIE and WOOD), T., 1076; P., 1900, 17.
- dioxide, hydrate of, thermochemistry of (DE FORCRAND), A., ii, 129.
- phosphates (v. KNORRE), A., ii, 651.
- selenoantimonites and complex salts with sulphur and thioantimonites (POUGET), A., ii, 84.
- selenotetrathionate (NORRIS and FAY), A., ii, 272.
- silicate solutions as a solvent of quartz (SPEZIA), A., ii, 595.
- sulphate, test by freezing point determinations of the dissociation values of solutions of (ARCHIBALD), A., ii, 65.
- chromium sulphate (PAGEL), A., ii, 349.
- hydroximidosulphate, gradual decomposition of (DIVERS and HAGA), T., 978; P., 1900, 147.

- Sodium** hydrosulphides, sulphides and polysulphides (BLOXAM), T., 753; P., 1899, 146.
- sulphides, action of, on aromatic nitro-compounds (BLANKSMA), A., i, 226, 482.
- sulphite, decomposition of an ice-cold solution of, by carbon dioxide (DIVERS and HAGA), T., 681.
- hydrogen sulphite, combination of, with organic compounds by an ethylene linking (LABBÉ), A., i, 149.
- hyposulphite (BERNTSEN and RAZLEN), A., ii, 203.
- osmisulphite and chloro-osmisulphite (ROSENHEIM), A., ii, 660.
- potassium sulphites, non-existence of two isomeric (FRAPS), A., ii, 276.
- sulphite and thiosulphate, double, with silver and copper (ROSENHEIM and STEINHÄUSER), A., ii, 652.
- thiosulphate, fusion of (KÜSTER and THIEL), A., ii, 68.
- decomposition of, by acids (v. OETTINGEN), A., ii, 400.
- crystalline hydrates of (TAYLOR), A., ii, 206.
- action of, on bismuth and iron salts (FAKTOR), A., ii, 692.
- action of, on chromium and silver salts (FAKTOR), A., ii, 691.
- action of, on lead salts (FAKTOR), A., ii, 688, 691.
- action of, on mercury salts (FAKTOR), A., ii, 627.
- titration of mercury salts by (NORTON), A., ii, 689.
- action of, on potassium antimony tartrate (FAKTOR), A., ii, 598.
- action of, on selenium dioxide, and on tellurium dioxide (NORRIS and FAY), A., ii, 272.
- detection of (HUYSE), A., ii, 245.
- tungstate, solubility of, in water, and the density and refractive index of its solution (PAWLEWSKI), A., ii, 400.
- Sodium**, detection of, in presence of potassium (SCHOORL), A., ii, 625.
- Soil analyses** (v. FEILITZEN), A., ii, 504.
- Soils**, mechanical analysis of (SCARLATA), A., ii, 368.
- estimation of combined carbon dioxide in (SCHÜTTE), A., ii, 48.
- estimation of combined carbon dioxide in, by Stutzer and Hartleb's method (WOY), A., ii, 170.
- rapid estimation of clay in (POQUILLON), A., ii, 316.
- estimation of humus in (ASCHMAN and FABER), A., ii, 60.
- Soils**, estimation of humus in, errors in the (EMERY), A., ii, 516.
- estimation of available phosphoric acid in (PAGNOUL), A., ii, 167.
- estimation of phosphoric acid available as plant food in (PLOT), A., ii, 510.
- estimation of phosphoric acid and potash in, by the humic acid method (HOFFMEISTER), A., ii, 244.
- estimation of potash in (ADIE and WOOD), T., 1079; P., 1900, 18; (HOFFMEISTER), A., ii, 244.
- See also Agricultural Chemistry.
- Solanaceæ**, alkaloids of the (HESSE), A., i, 50; (GADAMER), A., i, 356.
- Solanine**, physiological functions of (ALBO), A., ii, 234.
- Solanthic acid** (BRÄUTIGAM), A., i, 177.
- Solubility**. See under Solution.
- Solution**, theory of (WILDERMANN), A., ii, 262.
- behaviour of hydrated salts in (BANCROFT), A., ii, 195.
- Solubility**, changes of, by the addition salts (ROTHMUND), A., ii, 467.
- of mixtures of salts having one common ion (TOUREN), A., ii, 396, 530, 646.
- relation between heat of solution and, of electrolytes (VAN LAAR), A., ii, 708.
- of hydrated mixed crystals (STORTENBEKER), A., ii, 530.
- of quartz in sodium silicate solutions (SPEZIA), A., ii, 595.
- of argon and helium in water (ESTREICHER), A., ii, 205.
- of carbon dioxide in alcohol and water (BOHR), A., ii, 267.
- of hydrogen and nitrogen in aqueous solutions of dissociating substances (BRAUN), A., ii, 529.
- of nitrogen and oxygen in various liquids at low temperatures (CLAUDE), A., ii, 649.
- of the alkaline earth carbonates in water containing carbon dioxide (BODLÄNDER), A., ii, 715.
- of barium, potassium and sodium chlorides and of ammonium sulphate at the boiling point (BUCHANAN), A., ii, 711.
- of salts of calcium, iron and copper in sucrose solutions (STOLLE), A., i, 333.
- of calcium carbonate in sea water (COHEN and RAKEN), A., ii, 725.
- of lime (in three forms) in sugar solutions (WEISBERG), A., i, 628.
- of cupric chloride in organic liquids (OECHSNER DE CONINCK), A., ii, 542.

- Solubility** of tricalcium phosphate in natural waters in presence of carbonic acid (SCHLÖSING), A., ii, 541, 618.
 of potassium carbonate solution in aqueous ammonia, and *vice versa* (NEWTH), T., 775; P., 1900, 87.
 of mixed potassium nitrite and nitrate (DIVERS), P., 1900, 40.
 of silver halogen salts (THIEL), A., ii, 521.
 of sodium tungstate in water (PAWLEWSKI), A., ii, 400.
 of zinc hydroxide (HERZ), A., ii, 338.
 of hydrates of zinc sulphate (COHEN), A., ii, 184.
 of anhydrides of organic acids in water (VAN DE STADT), A., i, 200.
 reciprocal, of liquids (BRUNI), A., ii, 196.
 of benzophenone (DERRIEN), A., i, 299.
 of ethyl acetate in aqueous salt solutions (EULER), A., ii, 196.
 of osazones (NEUBERG), A., i, 410.
 of trialkyl phosphates and their lead and barium salts (CAVALIER and PROST), A., i, 580.
 of uric acid in nucleic and thymic acids (KOSSEL and GOTO), A., ii, 421; (GOTO), A., ii, 740.
 of silver *d*-valerate (TAVERNE), A., i, 473.
- Solubility coefficients** of water and aniline, and water and *n*-amyl alcohol (AIGNAN and DUGAS), A., ii, 68.
- Solutions**, electrolytic decomposition point of aqueous (GÖCKEL), A., ii, 332.
 thermokinetic properties of (NATANSON), A., ii, 191.
 diminution of vapour pressure, and increase in boiling point of dilute (SMITS), A., ii, 708.
 errors in determining the freezing point in dilute (WILDERMANN), A., ii, 131.
 dissociation in dilute, at 0° (WHEATHAM), A., ii, 390.
 composition of the surface layers of aqueous (v. ZAWIDZKI), A., ii, 713.
 colloidal. See Colloidal.
 concentrated, osmotic pressure of (EWAN), A., ii, 195.
 inorganic, partially miscible (NEWTH), T., 775; P., 1900, 87.
 isohydric, dissociation in (BANCROFT), A., ii, 529.
 saline, boiling temperatures and concentrations of (BUCHANAN), A., ii, 710.
 hydrolysis of (LEY), A., ii, 67, 731; (BRUNER), A., ii, 268.
- Solutions**, saline, causes of the changes of colour of (KONOWALOFF), A., ii, 266.
 behaviour of, towards ammonia (KONOWALOFF), A., ii, 265.
 action of magnesium on (TOMMASI), A., ii, 16; (MOURAOUR), A., ii, 206.
 saturated, electrolytic conductivity of (DAWSON and WILLIAMS), A., ii, 383.
 solid, and isomorphous mixtures (BRUNI), A., ii, 196.
 of saturated and non-saturated open-chain compounds (BRUNI and GORNT), A., ii, 714.
- Solution pressure**, theory of (MILNER), A., ii, 385.
 electrolytic, theory of (LEHFELDT), A., ii, 62; (KRÜGER; NERNST), A., ii, 706.
- Solution tension** of zinc in ethyl alcohol (JONES and SMITH), A., ii, 467.
- Solvent**, a new inorganic dissociative (WALDEN), A., ii, 10.
 formic acid as a (BRUNI and BERTI), A., ii, 591, 592.
 nitrogen peroxide as a (BRUNI and BERTI), A., ii, 591.
 influence of the, on the constitution of ethyl acetoacetate and similar substances (WISLICIENUS), A., i, 9.
 influence of the, on the cryoscopic behaviour of phenols (AUWERS), A., ii, 66.
 cryoscopic behaviour of substances with constitutions similar to that of the (GARELLI and CALZOLARI), A., ii, 65.
 See also Cryoscopy.
- Soot**, composition of, from mineral coal (WARTH), A., ii, 723.
- Sorbic acid**, synthesis of (DOEBNER), A., i, 536.
- Sorbinose** (*sorbose*), polarisation and reducing power of (SMITH and TOLLENS), A., i, 378.
- d*-**Sorbinose** (DE BRUYN and ALBERDA VAN EKENSTEIN), A., i, 208.
- l*-**Sorbinose** (*ψ-tagatose*) (DE BRUYN and ALBERDA VAN EKENSTEIN), A., i, 208, 332.
- i*-**Sorbinose**, nature of (ADRIANI), A., i, 628.
- d*-**Sorbitol**, compounds of, with benzaldehyde and *p*-nitrobenzaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- d*- and *l*-**Sorbitols**, benzylidene and methylene derivatives of (DE BRUYN and ALBERDA VAN EKENSTEIN), A., i, 332.

- Specific gravity.** See Density.
 heat. See Thermochemistry.
 rotation. See Photochemistry.
- Spectrometer scale reader,** improved (PERKIN), T., 291.
- Spectrum.** See Photochemistry.
- Spermine,** Poehl's, physiological action of (DIXON), A., ii, 676.
- Sphagnol** (CZAPEK), A., i, 556.
- Sphene** from Japan (JIMBŌ), A., ii, 88.
 from Moravia (KOVÁŘ), A., ii, 148.
- Sphingosine** and **Sphingomyelin** (THUDICHUM), A., i, 320.
- Spiræin** from Spiræas (BEYERINCK), A., i, 108.
- Spirits,** estimation of fusel oil in (ADAM), A., ii, 53; (BECKMANN and BRÜGGMANN), A., ii, 175.
- Spodiophyllite** from Greenland (FLINK), A., ii, 410.
- Spruce fir.** See Agricultural Chemistry.
- Stannic** and **Stannous.** See under Tin.
- Starch,** natural and artificial, physical properties of (RODEWALD and KATTEIN), A., i, 477.
 heat developed by, by the absorption of water (RODEWALD and KATTEIN; RODEWALD), A., i, 477.
 preparation of solutions of, and separation of starch granules (RODEWALD and KATTEIN), A., i, 79.
 action of amylase on (POTTEVIN), A., i, 80.
 digestion of, in the stomach of Carnivora (FRIEDENTHAL), A., ii, 224.
 potato-, constitution, and hydrolysis of (SYNIEWSKI), A., i, 78.
 wheat-, specific heats of (RODEWALD and KATTEIN), A., i, 477.
 estimation of (CRISPO), A., ii, 176.
 estimation of, in yeast (BRUYLANTS and DRUYTS), A., ii, 113.
- Starch-meal.** See Agricultural Chemistry.
- Stars,** spectra of, origin of certain unknown lines in the (LUNT), A., ii, 585.
- Stearic acid,** formation of, from oleic acid (FREUNDLICH and ROSAUER), A., i, 581.
mono- and *di-*bromo- (KASANSKY), A., i, 426.
- Steel.** See under Iron.
- Steenstrupine** from Greenland (BOEGGILD), A., ii, 413.
- Stereochemical** behaviour of the nitro-group (WEDEKIND), A., i, 216.
 observations on the reaction between picric chloride and aromatic amines (WEDEKIND), A., i, 216.
- Stereoisomerides** and racemic compounds (COOPER), A., ii, 269.
- Stilbene** (*s-diphenylethylene*) and its derivatives, preparation of (v. WALTHER and WETZLICH), A., i, 438.
 refraction of (CHILESOTTI), A., i, 339.
- Stokesite** from Cornwall (HUTCHINSON), A., ii, 89, 603.
- Stomach,** chemical processes in the (SCHUYTEN), A., ii, 509.
 formation of hydrochloric acid in the (WESENER), A., ii, 92.
 See also Gastric juice.
- Stomach contents,** relationship between the nitrogen and chlorides of the (WINTER and FALLOISE), A., ii, 554.
- Storax,** examination of (DIETERICH; EVERS), A., ii, 118.
- Streptococcus** *hornensis* (BOEKHOUT), A., ii, 742.
- Streptothrix chromogena,** biology of (BEYERINCK), A., ii, 425.
- Strontium salts,** toxic action of, in plant culture (COUPIN), A., ii, 363; (SUZUKI), A., ii, 561.
- Strontium amalgam** (KERP and BÖTTGER), A., ii, 656.
- Strontium aluminates** (ALLEN and ROGERS), A., ii, 727.
 chromate, action of ammonium chloride on (DUMESNIL), A., ii, 625.
dioxide, hydrated and anhydrous, heat of formation of (DE FORCRAND), A., ii, 344.
 phosphide, crystallised (JABOIN), A., ii, 76.
 sulphide, phosphorescent, preparation of (MOURELO), A., ii, 141.
- Strontium, detection and separation of:**—
 detection of barium, calcium and (DUMESNIL), A., ii, 625.
 separation of, from barium and calcium (KÜSTER), A., ii, 108.
- Strophanthic acid** (FEIST), A., i, 556.
- Strophanthidin** and its isomeride, strophanthidolactone (FEIST), A., i, 555.
- Strophanthin** and ψ -**Strophanthin**, and their hydrolysis (FEIST), A., i, 555.
- Strychnine,** action of chloroform, iodoform, and methylene iodide on (TROWBRIDGE), A., i, 187.
 additive derivatives of (TROWBRIDGE), A., i, 517.
 salts, behaviour of, to chloroform (HILL), A., ii, 455.
 estimation of (FARR and WRIGHT), A., ii, 778.
- Strychnine,** tetrachloro- and its oxime, and hexachloro- (MINUNNI and ORTOLEVA), A., i, 309.

- Styrene** (*cinnamene*; *phenylethylene*), influence of light on the transformation of, into metastyrene (LEMOINE), A., i, 91.
- action of iodine and mercuric oxide on (BOUGAULT), A., i, 641.
- C-Styrenylhydroxytriazole** and its acetyl derivatives (YOUNG and WITHAM), T., 294; P., 1900, 5.
- Styrolene** diformate (BÉHAL), A., i, 581.
- Styrylcarbamic acid**, methyl and ethyl esters (THIELE and PICKARD), A., i, 30.
- Styryltrichloromethylcarbinol**, synthesis of, its acetyl derivative, and the action of aqueous potassium hydroxide on (DRBOGLAFF), A., i, 490.
- Suberone**. See *cycloHeptanone*.
- Sublimation**, apparatus for (RIIBER), A., ii, 468.
- Submaxillary gland**. See Gland.
- Substance**, m. p. 132-133°, from acetone and persulphuric acid (v. BAEYER and VILLIGER), A., i, 133.
- m. p. 120°, from an alcoholic solution of acetophenone (OECHSNER DE CONINCK and DERRIEN), A., i, 503.
- m. p. 180° and 182°, from alcoholic solutions of benzophenone (OECHSNER DE CONINCK and DERRIEN), A., i, 502.
- $N_2H_4S_2O_3$, and its salts, from the decomposition of ammonium amidosulphite (DIVERS), P., 1900, 104.
- $C_3H_6O_2Hg_2NO_3$, from the action of methylalcoholic potash and mercuric oxide on potato-starch (HOFMANN), A., i, 384.
- $C_3H_6O_4N_2$, from the electrolytic oxidation of acetoxime (SCHMIDT), A., i, 332.
- $C_3H_6O_6Hg_4NO_3$, from the action of methylalcoholic potash and mercuric oxide on sucrose (HOFMANN), A., i, 384.
- $C_5H_{10}O_6S_2$, from trimethylenedisulphone and formaldehyde (KÖRZ), A., i, 370.
- $C_6H_5O_3N_4$, from the action of nitric acid on acetylene (BASCHIERI), A., i, 534.
- $C_6H_5OCl_4$, from the action of chlorine monoxide on benzene (SCHOLL and NÖRR), A., i, 337.
- $C_6H_5O_2$, from the hydrolysis of acetylcarbonyl acetate (PERATONER and LEONARDI), A., i, 551.
- $C_6H_5O_4N_4$, isomeric, from acetyl-methylnitrolic acid, and their derivatives (STEFFENS), A., i, 74.
- Substance**, $C_6H_9O_4N_3$, from the oxidation of α -mesityloxime (HARRIES), A., i, 504.
- $C_6H_9O_4N_3$, from trinitroanhydrodiacetonecarbamide (TRAUBE and LORENZ), A., i, 116.
- $C_8H_6Br_4$, from the action of bromine on camphonic acid (LAPWORTH and CHAPMAN), T., 466; P., 1900, 57.
- $C_8H_9O_2N$, from chloroform, alcoholic potash and α -benzylhydroxylamine (BIDDLE), A., i, 137.
- $C_8H_{11}I$, from iodoform and acetone (NEF), A., i, 2.
- $C_8H_{11}O_3N_7$, from chloroamino-4-methylpyrimidine and carbamide (GABRIEL and COLMAN), A., i, 56.
- $C_8H_{12}O_3$, from the action of hydriodic acid on acetylcedron (ČEČELSKÝ), A., i, 225.
- $C_8H_{14}ON_2$, from the oxidation of 4:4-dimethyl-5-isopropylpyrazoline (FRANKE), A., i, 212.
- $C_8H_{15}O_3N_3$, from the action of nitrous acid on β -hexahydro- γ -benzylaminocarboxylic acid (EINHORN and LADISCH), A., i, 228.
- $C_9H_{10}OCl_2$, from the action of chloroform and alkali on 1:3:4-xyleneol (AUWERS), A., i, 160.
- $C_9H_{15}O_2N_2Cl$, by the action of hydroxylamine and hydrogen chloride on hydroxymethylenetropinone (WILLSTÄTTER and IGLAUER), A., i, 244.
- $C_{10}H_6O_2N_8$, from 4-methylpyrimidine and fuming nitric acid (GABRIEL and COLMAN), A., i, 56.
- $C_{10}H_9O_3N_3$, from the oxidation of benzylideneacetoxime (HARRIES), A., i, 504.
- $C_{10}H_{11}O_6N_2$, from α -dibromocamphor and nitric acid (LAPWORTH and CHAPMAN), T., 309; P., 1900, 4.
- $C_{10}H_{15}Br$, from tribromofenchane, zinc dust, and acetic acid (CZERŃNY), A., i, 676.
- $C_{10}H_{16}O_4$, from camphor, potassium persulphate and sulphuric acid (v. BAEYER and VILLIGER), A., i, 133.
- $C_{10}H_{16}O_4$ and $C_{10}H_{19}O_4$, from the condensation of glyoxal and isobutaldehyde (v. HORNBOSTEL and SIEBNER), A., i, 206.
- $C_{10}H_{19}O_3N$, $C_{15}H_{25}ON_3$, and $C_{20}H_{33}O_5N_5$, from methyl propyl ketone, isoamyl nitrite, and hydrogen chloride (KISSEL), A., i, 621.
- $C_{10}H_{22}O_2$, from isoamyl nitrite, isoamyl alcohol, and hydrogen chloride, and its oxidation products (KISSEL), A., i, 620.

Substance, $C_{10}H_{22}O_3$, from carvomethyl bromide or chloride and silver oxide (KONDAKOFF and LUTSCHININ), A., i, 106.

$C_{10}H_{22}O_3$, and $C_{12}H_{24}O_4$, from isobutyl nitrite, alcohol, and hydrogen chloride (KISSEL), A., i, 621.

$C_{11}H_{16}O_2$, obtained by the distillation of lead fenchocarboxylate (WALLACH, NEUMANN, and v. WESTPHALEN), A., i, 241.

$C_{12}H_{10}O_3I$, from iodophenylacetylene, silver acetate and glacial acetic acid (NEF), A., i, 22.

$C_{12}H_{11}O_3$, from the empyreumatic oil of juniper (CATHELINEAU and HAUSER), A., i, 510.

$C_{12}H_{12}O_4N_2S_3$, from bromine, carbon disulphide, and ethyl sodiocyanacetate (WENZEL), A., i, 536.

$C_{13}H_9O_3Br$, from the action of alcoholic potash on ethyl bromonaphthaquinoneacetate (LIEBERMANN), A., i, 311.

$C_{13}H_{16}O_6$ (?), from the reduction of ethyl dimethylpyronedicarboxylate (OLIVERI-TORTORICI), A., i, 552.

$C_{14}H_{12}N_4$, from the decomposition of "cyanobenzidine" (MEVES), A., i, 484.

$C_{14}H_{14}O_8N_2$, and $C_{14}H_{16}O_5N_2$, from the oxidation of hæmatoporphyrin (KÜSTER and KÖLLE), A., i, 69.

$C_{14}H_{19}O_6N_3$, from semicarbazide and ethyl dimethylpyronedicarboxylate (OLIVERI-TORTORICI), A., i, 552.

$C_{14}H_{26}N_4S_2$, from formaldehyde, piperidine and dithio-oxamide (WALLACH), A., i, 211.

$C_{15}H_{14}O_2N_2$, from thymoquinone and benzoylphenylhydrazine (McPHERSON), A., i, 124.

$C_{16}H_{12}ON_2$, from α -benzaminocinnamide (ERLENMEYER), A., i, 549.

$C_{16}H_{12}O_4$, from *Digitalis lutea* (ADRIAN and TRILLAT), A., i, 185.

$C_{16}H_{22}O_8S_3$, from bromine, carbon disulphide, and ethyl sodimalonate (WENZEL), A., i, 536.

$C_{16}H_{26}O_4$, from the reduction of *p*-methylolbenzoic acid with sodium and amyl alcohol (EINHORN and LADISCH), A., i, 228.

$C_{16}H_{30}N_4S_2$, from acetaldehyde, piperidine and dithio-oxamide (WALLACH), A., i, 211.

$C_{17}H_{16}O$, from benzophenone (OECHSNER DE CONINCK and DERRIEN), A., i, 502.

$C_{17}H_{16}O_6$, from resorcinol and formaldehyde in presence of dilute mineral acids (GOLDSCHMIDT), A., i, 436.

Substance, $C_{17}H_{20}O_5$, from the action of alcoholic potash on acid, $C_{18}H_{18}O_9$ (GILBODY, PERKIN, and YATES), P., 1900, 107.

$C_{18}H_{16}O_5N_3$, from *p*-aminobenzoic acid and ethyl acetoacetate in presence of pyridine (TROEGER), A., i, 227.

$C_{18}H_{20}O_2N_2$, from *o*-phenylenediamine and camphoroxalic acid (J. B. and A. TINGLE), A., i, 302.

$C_{18}H_{22}N_4S_3$, from formaldehyde, methylaniline and dithio-oxamide (WALLACH), A., i, 211.

$C_{19}H_{18}O_4$, from the action of phenylhydrazine on trimethylbrazilone (GILBODY, PERKIN, and YATES), P., 1900, 105.

$C_{19}H_{18}O_6N_2$, from the action of hydroxylamine hydrochloride on dipiperonalacetone (MINUNNI and CARTASATTA), A., i, 237.

$C_{19}H_{19}O_2N$, and $C_{23}H_{25}O_3N$, from the condensation of benzyl cyanide and ethyl cinnamate (ERLENMEYER), A., i, 493.

$C_{19}H_{19}O_7N$, from the oxime of *d*-usnic anhydride and sodium methoxide (WIDMAN), A., i, 235.

$C_{19}H_{22}O_6$, from isolariciresinol (BAMBERGER and LINDSIEDL), A., i, 48.

$C_{19}H_{35}O_5N_{11}$, by the action of nitrous acid on hexethylidenetetramine (KUDERNATSCHEK), A., i, 337.

$C_{20}H_{16}ON_3$, from the action of carbonyl chloride on anilindiphenylguanidine (SCHALL), A., i, 464.

$C_{20}H_{26}N_4S_2$, from formaldehyde, methylaniline, and dimethyldithio-oxamide (WALLACH), A., i, 211.

$C_{20}H_{28}N_4S_2$, from formaldehyde, ethylaniline, and dithio-oxamide (WALLACH), A., i, 211.

$C_{20}H_{38}ON_2$, from the oxidation of menthanementhylhydrazone (KJERNER), A., i, 278.

$C_{21}H_{16}N_4$, from benzoic chloride and "cyananiline" (MEVES), A., i, 483.

$C_{22}H_8O_6$, and $C_{22}H_{10}O_6$, from 1:4-dihydroxynaphthalene (RUSSIG), A., i, 601.

$C_{22}H_{16}O_4$, from the oxidation of methoxynaphthol (RUSSIG), A., i, 602.

$C_{22}H_{18}O$, from the hydrogen chloride additive product of benzyldenedibenzyl ketone and potassium hydroxide (GOLDSCHMIDT and KNÖFFER), A., i, 35.

$C_{22}H_{18}O_3N_2$, from 3:5-diphenylisooxazoleoxime and phenylcarbimide (WISLICENUS), A., i, 38.

- Substance**, $C_{22}H_{19}O_3N_3$, from ammonia, benzaldehyde, ethyl methylecyanoacetate and ethyl ethylecyanoacetate (GUARESCHI), A., i, 52.
- $C_{22}H_{30}N_4S_2$, from formaldehyde, ethylaniline, and dimethyldithio-oxamide (WALLACH), A., i, 211.
- $C_{22}H_{34}O_{13}N_{10}$, from a mixture of glycine and glycerol (BALBIANO and TRASCIATTI), A., i, 632.
- $C_{22}H_{34}N_4S_2$, from valeraldehyde, piperidine and dithio-oxamide (WALLACH), A., i, 211.
- $C_{23}H_{14}O_3N_2$, from acetylmorphenol, chromic acid and *o*-tolylenediamine (VONGERICHTEN), A., i, 248.
- $C_{23}H_{19}ON$ from the action of formaldehyde on ethyl- β -naphthylamine hydrochloride in alcoholic solution (MORGAN), T., 819; P., 1900, 131.
- $C_{24}H_{34}N_4S_2$, from formaldehyde, methylaniline, and diethyldithio-oxamide (WALLACH), A., i, 211.
- $C_{24}H_{34}N_4S_2$, from benzaldehyde, diethylamine, and dithio-oxamide (WALLACH), A., i, 211.
- $C_{26}H_{34}N_4S_2$, from benzaldehyde, piperidine and dithio-oxamide (WALLACH), A., i, 211.
- $C_{26}H_{36}O$, from butylxylylglyoxylic acid (BAUR-THURGAU and BISCHLER), A., i, 178.
- $C_{26}H_{38}O_6$, from the action of alkalis on strophanthidin (FEIST), A., i, 556.
- $C_{26}H_{20}O_9$, from *Pachyrhizus angulatus* (VAN SILLEVOLDT), A., i, 109.
- $C_{26}H_{26}O_3$, from dibenzyl ketone and benzaldehyde (GOLDSCHMIEDT and KNÖFFER), A., i, 36.
- $C_{30}H_{22}O_5$, $C_{45}H_{30}O_6$, $C_{60}H_{42}O_9$, $C_{90}H_{60}O_{13}$, from *p*-toluoyl-*o*-benzoic acid (LIMPRICHT and WIEGAND), A., i, 498.
- $C_{30}H_{24}ON_2$, by the action of potassium cyanide on benzyl cyanide and benzoïn (SMITH), A., i, 39.
- $C_{30}H_{30}N_4S_2$, from benzaldehyde, methylaniline, and dithio-oxamide (WALLACH), A., i, 211.
- $C_{32}H_{31}O_2NCl_2$ from chlorodibenzyl methyl ketone (GOLDSCHMIEDT and KNÖFFER), A., i, 35.
- $C_{32}H_{34}N_4S_2$, from formaldehyde, dibenzylamine, and dithio-oxamide (WALLACH), A., i, 211.
- $C_{32}H_{36}O_5N_4$, obtained in the preparation of hematoporphyrin from hæmin (KÜSTER and KÖLLE), A., i, 69.
- $C_{34}H_{36}O_2N_2$, from tolylbutanonic acid and phenylcarbimide (KLOBB), A., i, 405.
- Substance**, $C_{36}H_{58}N_2S_2$, from benzaldehyde, diamylamine, and dithio-oxamide (WALLACH), A., i, 211.
- $C_{44}H_{40}O_8N_2$, and $C_{88}H_{78}O_{11}N_4$, from benzylidene- β -naphthylamine and ethyl cetipate (THOMAS-MAMERT and WEILL), A., i, 427.
- $C_{45}H_{42}O_2N_2$, from the action of benzaldehyde on ethyl- β -naphthylamine (MORGAN), T., 1210; P., 1900, 171.
- Substances**, condition of, insoluble in water, formed in gelatin (DE BRUYN), A., ii, 136, 717.
- Substitution** in phenols, inhibiting effect of etherification on (ARMSTRONG and LEWIS), P., 1900, 157.
- Succinic acid** (*ethanedicarboxylic acid*), electrolytic oxidation of (CLARKE and SMITH), A., i, 77.
- estimation of, in fermented liquids (LABORDE and MOREAU), A., ii, 114.
- ethyl ester, condensation of, with cyclic ketones (STOBBE and FISCHER), A., i, 179.
- Succinic acid**, dicyano-, ethyl ester (THORPE and YOUNG), T., 937; P., 1900, 115.
- iso*Succinic acid. See Methylmalonic acid.
- Succinic acids**, alkyl substituted, preparation and dissociation constants of (BONE and SPRANKLING), T., 654, 1298; P., 1900, 71, 184.
- and their amic acids and imides, melting points of (AUWERS, MAYER, and SCHLEICHER), A., i, 84.
- Succinimide**, crystalline compounds of, with phenols (VAN BREUKELEVEEN), A., i, 343.
- Succinimides**, reduction of, to pyrrolidones (TAFEL and STERN), A., i, 557.
- Succinimino-ethers**, rearrangement of (WHEELER and BARNES), A., i, 294.
- Succinylsuccinic acid**, ethyl ester, hydrogenisation of (STOLLÉ), A., i, 234.
- Succitolyl ketone** (*ditolyl ethylene diketone*) (LIMPRICHT), A., i, 600.
- Sucrose** (*saccharose, cane sugar*), formation of, from dextrose in the cell (GRÜSS), A., ii, 361.
- distribution of, in plants (ANDERSSSEN), A., ii, 561.
- electrolysis of solutions of (ULSCH), A., i, 15.
- variation of the specific rotation of, with the temperature (SCHÖNRÖCK), A., i, 378.
- influence of pressure on the rotation of solutions of (SIERTSEMA), A., ii, 329.
- cryoscopic researches on (BATELLI and STEFANINI), A., ii, 709.

- Sucrose** (*saccharose, cane sugar*), viscosity of solutions of (HOSKING), A., ii, 336.
 stability of solutions of (OECHSNER DE CONINCK), A., i, 378.
 oxidation of, by hydrogen peroxide (MORRELL and CROFTS), T., 1220; P., 1900, 171.
 inverting power of citric, oxalic and tartaric acid on (GILLOT), A., i, 208.
 solubility of salts of calcium, iron, and copper in solutions of (STOLLE), A., i, 333.
 detection of, in lactose (LANDIN), A., ii, 514.
 detection of, in margarine (MECKE), A., ii, 319.
 estimation of, in beet (KOVÁK), A., ii, 694.
 estimation of, in condensed milk (GRÜNHUT and RIIBER), A., ii, 249.
 estimation of, in glycerin-soaps (FREYER), A., ii, 373.
- Sugar** from curangin (BOORSMA), A., i, 243.
 as food (STROHMER), A., ii, 490.
 formation of, in diabetes (ROSENQVIST), A., ii, 155.
 as an aid to the growth of plants (GOLDING), A., ii, 617.
- Sugar, invert**, from Finnish mossberry (STOLLE), A., ii, 614.
 estimation of, in presence of sucrose (JESSEN-HANSEN), A., ii, 113.
- Sugar-cane.** See Agricultural Chemistry.
- "Sugar-colours,"** colouring matters contained in, and their detection (SCHWEITZER), A., i, 277.
- Sugars** of some glucosides (VOTOČEK), A., i, 355.
 obtained by the hydrolysis of strophanthin and ψ -strophanthin (FEIST), A., i, 540, 555.
 in the liver (SEEGEN), A., ii, 29.
 relation between the diuretic coefficients, osmotic pressures, and molecular weights of (HÉDON and ARROUS), A., ii, 94.
 effect of, on the velocity of hydrolysis of acids (COHEN), A., ii, 716.
 inversion of, by acids, influence of normal salts on (ARRHENIUS), A., ii, 201.
 cause of the diminution of the rate of inversion of raw (STOLLE), A., i, 277.
 determination of the inverting power of raw (JESSER), A., i, 276.
 absorption of, in the intestine (HÉDON), A., ii, 223.
 source of error in the detection of, in urine, by means of Fehling's solution (EURY), A., ii, 249.
- Sugars**, detection of, in urine by phenylhydrazine (KOWARSKY), A., ii, 54.
 simplification of the phenylhydrazine test for, in urine (NEUMANN), A., ii, 248.
 effect of glycuronic acid on the phenylhydrazine test for, in urine (MAYER), A., ii, 320.
 estimation of, gravimetrically (CHAPPELLE), A., ii, 112, 629.
 estimation of, in fatty substances (POSSETTO), A., ii, 176.
 estimation of, in peat-meal molasses (WOY), A., ii, 682.
 estimation of, in diabetic urine (PATEIN and DUFAU), A., ii, 176; (TROEGER and MEINE), A., ii, 635.
 estimation of, in urine (NEUBERG), A., i, 410; (PELLET), A., ii, 113.
 estimation of, polarimetrically, in wine (ROCQUES), A., ii, 695.
 reducing, estimation of, polarimetrically, in wines and lees (PELLET), A., ii, 113.
 separation and purification of (RUFF and OLENDORFF), A., i, 77.
- Sulphazotised salts**, Fremy's (DIVERS and HAGA), T., 440; P., 1900, 55.
- Sulphine derivatives**, attempts to resolve (STRÖMHOLM), A., i, 327.
- p-Sulphobenzeneazodiphenylaminesulphonic acid**, sodium salt (GNEHM and WERDENBERG), A., i, 94.
- p-Sulphocinnamic acid**, reduction of (MOORE), A., i, 550.
- Sulphohalite**, composition of (PENFIELD), A., ii, 550.
- Sulphonal** (*diethylsulphonedimethylmethane*; *isopropylidenediethylsulphone*), detection and isolation of (VITALI), A., ii, 774.
 amino-, and its derivatives and homologues (POSNER and FAHRENHORST), A., i, 16.
- Sulphonamides** of amines, behaviour of, to alkalis (SOLONINA), A., i, 147; (MARCKWALD), A., i, 149.
- 4-Sulpho-1:2-naphthaquinoxalinediacetic acid** and its ethyl ester (THOMAS-MAMERT and WEIL), A., i, 460.
- Sulphonaphthylstearic acid** (TWITCHELL), A., i, 296.
- Sulphonation** and methylation, simultaneous, of colouring matters (PRUD'HOMME), A., i, 455.
- Sulphones.** See:—
 Acetonediamyldisulphone.
 Acetonediphenyldisulphone.
 Benzenesulphocamphenamide.
 Benzenesulphonamides.
 Benzenesulphon-o-anisidine.

Sulphones. See :—

Benzenesulphonemethyl-*o*-anisidine.
 Benzoylamino-sulphonal.
 β -Benzylsulphoneallylphthalamic acid.
 Bis- β -diamyldisulphonepropylthiocarbamide.
 Bis- β -diethyl-disulphonepropylthiocarbamide.
 Diamyldisulphoneacetonephthalamic acid.
 β -Diamyldisulphonepropylcarbamide.
 β -Diamyldisulphonepropylthiocarbamide.
 α -Diethyl-disulphoneglutaric acid.
 α -Diethyl-disulphonepropionic acid.
 β -Diethyl-disulphonepropylcarbamide.
 β -Diethyl-disulphonepropylthiocarbamide.
 γ -Diethyl-disulphonevaleric acid.
 Diethylethylidenedisulphone.
 Diethylketonediethyl-disulphone.
 Di-2:6-lutidyl-4-sulphone.
 Dimethylaminophenyl-methyl- and -ethyl-sulphones.
 Disulphones.
 Di-*p*-toluenesulphone-methylpiperazide and -propylamine.
 β -Ethylsulphoneglutaconic acid.
 2:6-Lutidyl-4-methylsulphone.
 Methyl- α -chloroethylketonediethyl-sulphone.
 Naphthylthiosulphonacetoacetic acids.
 Phenyl- β -diamyldisulphonepropylthiocarbamide.
 Phenyl- β -diethyl-disulphonepropylthiocarbamide.
 Phenylsulphonacetic acid.
 Phenylsulphonopropionic acid.
 Phenylthiosulphonacetoacetic acid.
 Phthalyliminoacetonediamyl-, -benzyl-, and -phenyl-disulphones.
 Pyridyl-2-methylsulphone.
 Sulphonal.
 Tetramethyldiaminobenzophenone-sulphone.
 Tetramethyldiaminodiphenylmethane-sulphone.
 Tetramethylenedisulphone.
 Tetrasulphones.
 Tetronal.
 p -Tolylthiosulphonacetoacetic acid.
 Trimethylenedisulphone.
 Trional.

Sulphonic acids, preparation of, by means of disulphides (BLANKSMA), A., i, 226, 482.

Sulphonic group, removal of, by reduction (MOORE), A., i, 550.

Sulphophenylstearic acid (*benzenestearosulphonic acid*) (TWITCHELL), A., i, 296.

Sulphosalicylic acid, esters of (COHN), A., i, 548.

Sulphur, amount of, in plants and soils (BOGDANOFF), A., ii, 160.

molecular weight of (BLEIER and KOHN), A., ii, 203, 721; (ARONSTEIN and MEIUIZEN), A., ii, 341.
 vapour density of (BLEIER and KOHN), A., ii, 203, 721; (SCHALL), A., ii, 271.

viscosity of, at temperatures above the point of maximum viscosity (MALUS), A., ii, 536.

stereochemistry of (SMILES), T., 160, 1174; P., 1899, 240; 1900, 168; (POPE and PEACHEY), T., 1072; P., 1900, 12.

excretion of, after extirpation of the liver (LANG), A., ii, 556.

excretion of, by infants (FREUND), A., ii, 226.

loosely combined, in urine (PETRY), A., ii, 675.

Sulphur compounds in Canadian petroleum (MABERY), A., i, 533.

chloride, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.

action of arsenious and antimonous oxides, and of bismuth trioxide on (ODDO and SERRA), A., ii, 74.

action of, on tungsten trioxide (SMITH and FLECK), A., ii, 81.

Sulphuryl dichloride, molecular weight of, in benzene (ODDO and SERRA), A., ii, 75.

Thionyl chloride, molecular weight of, in various solvents (ODDO and SERRA), A., ii, 75.

action of, on dimethylaniline and on diethylaniline (MICHAELIS and SCHINDLER), A., i, 215.

Sulphur perfluoride, SF₆ (MOISSAN and LEBEAU), A., ii, 341, 342.

Thionyl fluoride, preparation, properties and analysis of (MOISSAN and LEBEAU), A., ii, 472.

Sulphur hydride. See Hydrogen sulphide.

Sulphur dioxide as a dissociative solvent (WALDEN), A., ii, 10.

combination of, with oxygen (RUSSELL and SMITH), T., 340; P., 1900, 41.

action of dry ammonia on (DIVERS and OGAWA), T., 327; P., 1900, 38; (DIVERS), P., 1900, 104.

action of, on ammonia, and on fatty amines (SCHUMANN), A., ii, 271.

action of iodides and hydriodic acid on (PÉCHARD), A., ii, 398; (BERG), A., ii, 535; (VOLHARD), A., ii, 650.

estimation of (RUSSELL), T., 352; P., 1900, 41.

Sulphur dioxide, estimation of, in sulphites and thiosulphates (GRIFFIN), A., ii, 621.

Sulphur acids:—

Sulphuric acid, effect of concentration on the magnetic rotation of solutions of (FORCHHEIMER), A., ii, 524.

thermal capacity of solutions of (V. BIRON), A., ii, 63.

conductivity of aqueous solutions of hydrochloric acid and (BARNES), A., ii, 522.

migration constant of (KENDRICK), A., ii, 643.

surface-tension of mixtures of water and, and molecular mass of (LINEBARGER), A., ii, 273.

equilibrium between sulphates and, in aqueous solution (KAY), A., ii, 198.

relation between reactivity and concentration of (VAUBET), A., ii, 650.

interaction of, with hydrogen peroxide (LOWRY and WEST), T., 950; P., 1900, 126.

action of, on potassium ferrocyanide (ADIE and BROWNING), T., 150; P., 1899, 226.

hydrates of (V. BIRON), A., ii, 74.

detection of, in presence of thiosulphates (DOBBIN), A., ii, 437.

test for selenium in (SCHLAGDENHAUFFEN and PAGEL), A., ii, 342.

estimation of, photometrically (HINDS), A., ii, 575.

estimation of, volumetrically (LITTERSCHEID and FEIST), A., ii, 45.

estimation of, in presence of iron (WYROUBOFF), A., ii, 166; (KÜSTER and THIEL), A., ii, 242; (RICHARDS), A., ii, 472.

error in estimation of, in vegetable ashes (BOGDANOFF), A., ii, 160.

separation of, from vanadium (GOYDER), T., 1096.

Hyposulphurous acid (BERNTSEN and BAZLEN), A., ii, 203.

production of (NABL), A., ii, 13.

estimation of (FRADISS), A., ii, 44.

Sulphites and nitrites, interaction between (DIVERS and HAGA), T., 673; P., 1900, 70.

estimation of, in presence of thiosulphates (LUNGE and SEGALLER), A., ii, 366.

Persulphuric acids (LOWRY and WEST), T., 950; P., 1900, 126.

See also Caro's reagent.

Sulphur acids:—

Persulphates, action of, on iodine (MARSHALL), A., ii, 203.

estimation of (LE BLANC and ECKARDT), A., ii, 45.

Thiosulphuric acid, decomposition of (V. OETTINGEN), A., ii, 400; (HOLLEMAN), A., ii, 473.

estimation of, in presence of sulphites (LUNGE and SEGALLER), A., ii, 366.

Thiosulphates, action of, on iodates (JÜRGENSEN), A., ii, 620.

Sulphur compounds, organic, critical temperatures of (FERRETTO), A., ii, 386.

Sulphur, estimation of:—

estimation of, in bitumens (S. F. and H. E. PECKHAM), A., ii, 44; (LANGMUIR), A., ii, 310.

estimation of, in iron (BLOUNT), A., ii, 574.

estimation of, in pig and cast iron (RIEMER), A., ii, 309.

estimation of, in pig iron (MOORE), A., ii, 106.

estimation of, in naphtha (LIDOFF), A., ii, 107.

estimation of, in ores, mattes, etc. (TRUCHOT), A., ii, 309.

estimation of, in organic substances (HENRIQUES), A., ii, 107.

estimation of, in petroleum (FRIEDLÄNDER), A., ii, 107.

estimation of, in pyrites (HEIDENREICH), A., ii, 310.

Sulphuric methylal. See Methylene sulphate.

Sulvanite from South Australia (GOYDER), T., 1094; P., 1900, 164.

Superfused substances, phenomenon noticed in the cooling of (MORESCHINI), A., ii, 465.

Superphosphates. See Agricultural Chemistry.

Suprarenal capsules, physiology of the (BORUTTAU), A., ii, 225; (MOORE and PURINTON), A., ii, 492.

aldehydase from the (JACOBY), A., i, 711.

extracts (MOORE and PURINTON), A., ii, 295.

influence of minimal doses of, on blood-pressure (MOORE and PURINTON), A., ii, 737.

gland, a depressor substance in the (HUNT), A., ii, 295.

Suprarenals, the catechol-like substance of the (V. FÜRTH), A., ii, 292.

Suprarenine (V. FÜRTH), A., ii, 292.

Surface layers of aqueous solutions, composition of (V. ZAWIDZKI), A., ii, 713.

Surface tension, conductivity and specific gravity of aqueous solutions containing potassium chloride and sulphate (BARNES), A., ii, 332.
 of organic liquids (DUTOIT and FRIDERICH), A., ii, 194.
 of solid bodies (OSTWALD), A., ii, 712.
 of mixtures of sulphuric acid and water (LINEBARGER), A., ii, 273.
Svanbergite (PRIOR), A., ii, 602.
Symphytocynoglossine (GREIMER), A., i, 683.
Syrup, golden, analysis of (BODMER, LEONARD, and SMITH; MILLER and POTTS), A., ii, 320; (LEONARD; JONES), A., ii, 447; (MATTHEWS and PARKER), A., ii, 448.
 estimation of glucose syrup in (JONES), A., ii, 447.
 starch-, value of, in confections (KÖNIG), A., ii, 448.
Syrups, estimation of water in (MOLLEND), A., ii, 309.

T.

Tacamahaca resin, examination of (DIETERICH), A., ii, 118.
Tachyhydrite, influence of pressure on the formation of (VAN'T HOFF and DAWSON), A., ii, 76.
 ψ -**Tagatose**. See *l*-Sorbinose.
Tainiolite from Greenland (FLINK), A., ii, 411.
 α -**Tanacetogendicarboxylic acid** (FROMM), A., i, 402.
Tanacetone (*thujone*) and its derivatives (SEMMLER), A., i, 453.
 influence of active vegetable growth on the formation of (CHARABOT), A., ii, 362.
 formula of (SEMMLER), A., i, 240.
 conversion of, into carvotanacetone (SEMMLER), A., i, 676.
Tanacetone, *pernitroso*-, action of semicarbazide acetate on (RIMINI), A., i, 555.
Tanacetonedicarboxylic acid (SEMMLER), A., i, 453.
Tanacetyl alcohol (*thujol*) (SEMMLER), A., i, 453.
 influence of active vegetable growth on the formation of (CHARABOT), A., ii, 362.
Tannic and gallic acids, estimation of (JEAN), A., ii, 632.
Tannin, estimation of (SPECHT and LORENZ), A., ii, 515.
Tanning materials, analysis of (PAESSLER), A., ii, 457.
Tannins of *Arctostaphylos Uva-ursi*, *Hæmatoxylon campechianum*, *Rhus Melopium*, *Myrica Gale*, *Coriaria Myrtifolia*, and *Robinia Pseudacacia* (PERKIN), T., 424; P., 1900, 45.
 of *Cortex Lokri* (VAN DEN DRIESSEN-MAREEUW), A., ii, 102.
Tap cinder, estimation of iron in (BLUM), A., ii, 512.
Tar, Norwegian, composition of (STRÖM), A., i, 28, 577.
Tartar, crude, estimation of calcium malate in (ORDONNEAU), A., ii, 250.
Tartar emetics (BAUDRAN), A., i, 375; (PRUNIER), A., i, 376.
 See also Tartaric acid, potassium antimony salt of.
d-**Tartaric acid**, equilibrium between phenol, water and (SCHREINEMAKERS), A., ii, 393.
 product of the destructive distillation of (SIMON), A., i, 624.
 colour test for (WOLFF), A., ii, 115.
d-**Tartaric acid**, beryllium alkali salts (ROSENHEIM and ITZIG), A., i, 135.
 cobalt and nickel salts, and double salts with potassium (TOWER), A., i, 587.
 copper alkali salts (BULLNHEIMER and SEITZ), A., i, 330.
 molybdo- and tungsto-alkali salts, specific rotatory power of (ROSENHEIM and ITZIG), A., i, 272.
 potassiumantimony salt (*tartar emetic*), molecular weight of, by cryoscopic and boiling point methods (BATELLI and STEFANINI), A., ii, 709.
 action of sodium thiosulphate on (FAKTOR), A., ii, 598.
 potassium hydrogen salt, estimation of, in wine (MAGNIER DE LA SOURCE), A., ii, 768.
 potassium salts, metallic derivatives of. See also Tartar emetics.
d-**Tartaric acid**, ethyl ester, action of aniline and of hydroxylamine on (TINGLE), A., i, 544.
 action of ethyl iodide and sodium ethoxide on (BUCHER), A., i, 203.
 diethyl ester, preparation and rotation of acetyl and phenacetyl derivatives of (McCRAE and PATTERSON), T., 1096; P., 1900, 161.
l-**Tartaric acid**, copper alkali salts of (BULLNHEIMER and SEITZ), A., i, 330.
Racemic acid, alkali double salts (SCHLOSSBERG), A., i, 376.
Tartromalic acids, α - and β - and their salts (ORDONNEAU), A., i, 203.

- Tartronic acid**, oxidation of, in presence of ferrous salts (FENTON and JONES), T., 71; P., 1899, 224.
- Taste** of acid salts, relation of, to their degree of dissociation (KAHLENBERG), A., ii, 270, 646; (RICHARDS), A., ii, 391.
- Tautomeric compounds**, optical behaviour of (BRÜHL), A., i, 497.
- Tautomerism**, spectrographic studies in (HARTLEY and DOBBIE), T., 498; P., 1900, 57; (HARTLEY, DOBBIE, and PALIATSEAS), T., 839; P., 1900, 130.
- Tea**, examination of (BRYTHIEN, BOHRISCH, and DEITER), A., ii, 455.
- Tellurium**, extraction and purification of (CRANE), A., ii, 473.
preparation of pure (NORRIS, FAY, and EDGERLY), A., ii, 272.
electrical resistance and specific gravity of (LENHER and MORGAN), A., ii, 273.
isomorphism of, with selenium (NORRIS and MOMMERS), A., ii, 537.
- Tellurium compounds**, physiological action of (GIES and MEAD), A., ii, 294.
- Telluriodates**, compounds of, with ammonium, potassium and rubidium (WEINLAND and PRAUSE), A., ii, 399.
- Tellurium nitrate**, basic, composition of (NORRIS, FAY, and EDGERLY), A., ii, 272.
dioxide, action of sodium thiosulphate on (NORRIS and FAY), A., ii, 272.
- Tellurous acid**, estimation of, in presence of haloid salts (GOOCH and PETERS), A., ii, 45.
- Tellurium organic compounds**:—
compounds of, with amines (LENHER), A., i, 379.
halogen salts, compounds of, with dimethylamine hydrochloride and hydrobromide (NORRIS and MOMMERS), A., ii, 537.
- Tellurium**, separation of, from selenium (CRANE), A., ii, 473; (KELLER), A., ii, 573.
- Telfairia oil** and **Telfairic acid** (THOMS), A., i, 473.
- Temperature**. See Thermochemistry.
- Tennantite**, identity of binnite with (PRIOR and SPENCER), A., ii, 21.
- Terephthalaldehyde** tetracetate (THIELE and WINTER), A., i, 501.
- Terephthalic acid**, bromo-, preparation and esterification of (WEGSCHEIDER and BITTNER), A., i, 658.
nitro-, preparation and esterification of, its salts, and the action of benzyl alcohol on it (WEGSCHEIDER), A., i, 657.
- Teresantalic acid** from East Indian sandalwood oil (GUERBET), A., i, 242; (MÜLLER), A., i, 678.
- $\Delta^{1,3}$ -Terpadiene**, 2-chloro-, and 2-chlorobromo- (KLAGES and KRAITH), A., i, 43.
- $\Delta^{2(4,8)}$ -Terpadiene**, 3-chloro-, and chlorotetrabromo-, from pulegone (KLAGES), A., i, 44.
- Terpene**, $C_{10}H_{16}$, from cascarilla oil, and its additive derivatives (THOMS), A., i, 622.
 $C_{10}H_{16}$, from oil of savin (FROMM), A., i, 402.
- Δ^1 -Terpene**. See Tetrahydrocymene.
- Terpenes**, genesis of, in lavender (CHARABOT), A., i, 241.
pseudo- and ortho-derivatives of (SEMMLER), A., i, 452.
- Terpenone**, $C_{10}H_{16}O$, constitution of (SEMMLER), A., i, 676.
- Terpin diformate** (BÉHAL), A., i, 581.
- Tetanus toxin**. See Toxin.
- Tetra-aniline** antimonibromide (HIGBEE), A., i, 285.
stanni-bromide and -chloride (RICHARDSON and ADAMS), A., i, 151.
- Tetra-aspartide** (SCHIFF), A., i, 279.
- Tetrabenzoxy-**. See under the Parent Substance.
- 2:2'-Tetrabenzylidiamino-1:1'-dinaphthylmethane** (MORGAN), T., 814; P., 1900, 131.
- Tetracetoxyltoluene** (THIELE and WINTER), A., i, 505.
- Tetracetoxo-**. See also under the Parent Substance.
- 2:2'-Tetraethylidiamino-1:1'-dinaphthylmethane** (MORGAN), T., 814; P., 1900, 131.
- 1:2:3:4-Tetraethylbenzene**, refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
- Tetraethylphosphonium compounds** (PARTHEIL), A., ii, 544.
- Tetraethylstibonium salts** (PARTHEIL and MANNHEIM), A., i, 479.
- Tetraethyltetrasulphone**, $CH_2[CH(SO_2Et)_2]_2$, and *di*bromo- (KÖTZ), A., i, 370.
- Tetrahedrite** (*fahlore*), formula of (PRIOR and SPENCER), A., ii, 21.
- Tetrahydrobenzene**. See *cyclo*Hexene.
- Tetrahydrocarbazole**, transformations of (PLANCHER), A., i, 562.
- Tetrahydroapocinchene** and its diacetyl derivative (KOENIGS), A., i, 246.
- Tetrahydrocymene** (Δ^1 -terpene), 2-chloro-, and 2-chlorobromo- (KLAGES and KRAITH), A., i, 43.

- Tetrahydrofurfuran-2,5-dicarboxylic acid**, its synthesis, hydrate and isomeride (LEAN), T., 105; P., 1899, 198.
- d-ac-Tetrahydro-β-naphthylamine*, racemisation occurring during the formation of benzylidene, benzoyl, and acetyl derivatives of (POPE and HARVEY), P., 1900, 74.
- Tetrahydroquinoline** and **Tetrahydroisoquinoline**, action of iodine on (SCHMIDT), A., i, 187.
- Tetrahydroquinolyl-2-propionic acid** and anhydride (KOENIGS), A., i, 250.
- Tetrahydrotoluene**, physical constants of, and compound of, with acetic chloride (KONDAKOFF and SCHINDLMEISER), A., i, 508.
- m*-chloro- (KLAGES), A., i, 44.
- Tetrahydroxyanthraquinone** and its acetyl derivatives (SLAMA), A., i, 181.
- Tetrahydroxyflavone**. See Luteolin.
- Tetrahydro-xylic acid** (LEES and PERKIN), P., 1900, 20.
- Tetrahydroxytoluene** and its tetracetyl derivative (THIELE and WINTER), A., i, 505.
- 2:4:6:4'-Tetramethoxybenzoylacetophenone** (CZAJKOWSKI, V. KOSTANECKI, and TAMBOR), A., i, 504.
- Tetramethyl-*di*aminobenzhydrol**, action of, on rosinduline and *isorosinduline* (MÜHLAU and SCHAPOSCHNIKOFF), A., i, 367.
- Tetramethyl-*di*aminobenzophenone**, action of, on *α*-dinaphthylbenzidine (MERZ and STRASSER), A., i, 314.
- Tetramethyl-*di*aminobenzophenone-sulphone** (SACHS), A., i, 363.
- 2:2'-Tetramethyl-*di*amino-1:1'-dinaphthylmethane** and **1:1'-Tetramethyl-*di*aminodinaphthylmethane** (MORGAN), T., 823; P., 1900, 131.
- as*-**Tetramethyl-*di*aminodiphenylethane** and its derivatives (TRILLAT), A., i, 252.
- action of nitrous acid on (TRILLAT), A., i, 192.
- Tetramethyl-*di*aminodiphenylmethane**, preparation of (COHN), A., i, 608.
- Tetramethyl-*di*aminodiphenylmethane-sulphone**, compound of, with nitroso-dimethylaniline (SACHS), A., i, 362.
- Tetramethyl-*di*aminophenyl-carbinol** and **-methylcarbinol** (TRILLAT), A., i, 252.
- Tetramethylammonium cadmium haloids** (RAGLAND), A., i, 142.
- tin chlorides (COOK), A., i, 142.
- Tetrapropylapionolcarboxylic acid** (BIGNAMI and TESTONI), A., i, 400.
- s*-**Tetramethylbenzoin** (WEILER), A., i, 214.
- 1:3:4:6-Tetramethylcoumarone** (STOERMER), A., i, 653.
- Tetramethyl-decahydroacridinedione**, and **-octohydroxanthenedione** (VORLÄNDER and KALKOW), A., i, 99.
- s*-**Tetramethyldibenzyl**, synthesis of (WEILER), A., i, 213.
- Tetramethyldihydropyridone**, cyano-, action of heat on (GUARESCHI and GRANDE), A., i, 112.
- 4:6:6:8-Tetramethyl-6:7-dihydroquinoxalene** (V. PECHMANN), A., i, 173; (V. PECHMANN and SCHWARZ), A., i, 174.
- Tetramethylenedicarboxylic acid**. See *cyclo*Butanedicarboxylic acid.
- Tetramethylene-1:3-disulphone**, dimethyl and diethyl derivatives of (KÖRTZ), A., i, 369.
- Tetramethylethyl-octohydro-xanthenedione** (VORLÄNDER and KALKOW), A., i, 100.
- s*-**Tetramethylglutaric acid** and its salts and anhydride (MICHAILENKO and JAVORSKY), A., i, 586.
- αα,ββ*-**Tetramethylglutaric acids**, (*heptanedicarboxylic acids*) (THORPE), T., 932; (THORPE and YOUNG), T., 936; P., 1900, 114.
- Tetramethylhæmatoxylin**, oxidation of (PERKIN and YATES), P., 1900, 107.
- Tetramethylhæmatoxylone**, melting point of (GILBODY and PERKIN), P., 1899, 241.
- Tetramethylphosphonium compounds** (PARTHEIL), A., ii, 544.
- Tetramethylpyridone**, 3-cyano-1:2:3:4-, physiological action of (SABBATANI), A., ii, 94.
- Tetramethylpyrone** and its hydrate and salts (COLLIE and STEELE), T., 961; P., 1900, 146.
- periodide (COLLIE and STEELE), T., 1114; P., 1900, 164.
- Tetramethylpyrrolinocarboxylic acid**, amides of (PAULY and BOEHM), A., i, 357.
- Tetraphenylamine**, *diamino*-. See *Dixenylamine*, *diamino*-.
Tetraphenyl-β-diketopiperazine (HENZE), A., i, 119.
- Tetraphenylguanidine**, preparation of (V. BRAUN), A., i, 642.
- Tetraphenyl-*o*-phenylenediamine**, nitro- (HAEUSSERMANN), A., i, 365.
- Tetraphenylpyrrolone** (KLOBB), A., i, 406.
- Tetrapropylstibonium salts** (PARTHEIL and MANNHEIM), A., i, 480.
- Tetra-*n*- and -iso-propyltetrasulphones**, CH₂[CH(SO₂Pr)₂]₂ (KÖRTZ), A., i, 370.

Tetrasulphones, $\text{CH}_2[\text{CH}(\text{SO}_2\text{R})_2]_2$, reactivity of the hydrogen atoms in (KÖTZ), A., i, 369.

Tetrazine derivatives, conversion of, into triazole derivatives (HANTZSCH and SILBERRAD), A., i, 263; (BUSCH and HEINRICHS), A., i, 314.

Tetronal, chemico-toxicology of (VITALI), A., ii, 774.

Tetronic acid, chloro-, chlorobromo-, and iodo- (WOLFF and FERTIG), A., i, 585. nitro- and amino-, and their derivatives (WOLFF), A., i, 582; (WOLFF and LÜTTRINGHAUS), A., i, 583.

Tetronosulphonic acid (WOLFF and FERTIG), A., i, 586.

Thallium halogen salts, isomeric, and their constitution (CUSHMAN), A., ii, 725.

Thallium, tribromide, trichloride, and trinitrate (MEYER), A., ii, 655.

trichloride, effect of oxidising agents on the reduction of, by oxalic acid (KASTLE and BEATTY), A., ii, 627.

compounds of, with organic bases (MEYER), A., ii, 655.

permanganate (MEYER and BEST), A., ii, 78.

nitrates, formation and transformation of the double salts of silver nitrate and (VAN ELJK), A., ii, 403.

persulphate (MARSHALL), A., ii, 277.

Thallic sulphate, hydrolysis of (MARSHALL), A., ii, 207.

Thallium, estimation of:—

estimation of (THOMAS), A., ii, 442.

estimation of, as chromate (BROWNING and HUTCHINS), A., ii, 172.

estimation of, as sulphate (BROWNING), A., ii, 247.

Thebaol, constitution of (PSCHORR), A., i, 234.

α - ψ -Thebaol (6-hydroxy-1:5-dimethoxyphenanthrene), synthesis of (PSCHORR), A., i, 233.

α - ψ -Thebaolcarboxylic acid (6-hydroxy-1:5-dimethoxyphenanthrene-10-carboxylic acid) and its acetyl derivative (PSCHORR), A., i, 234.

Theobromine, decomposition of, in the organism (KRÜGER and SCHMIDT), A., ii, 31.

action of, on the heart (BOCK), A., ii, 424.

THERMOCHEMISTRY:—

Thermochemical law of maximum work (REYCHLER), A., ii, 258.

Thermodynamics and permanent change (DUHEM), A., ii, 524, 708. of normal cells (COHEN), A., ii, 520, 703.

THERMOCHEMISTRY:—

Thermokinetic properties of solutions (NATANSON), A., ii, 191.

Thermo-electrical properties of alloys (STEINMANN), A., ii, 523, 524.

Heat, absorption of, by the association of liquid molecules (VAN LAAR), A., ii, 189.

action of, on hydrogenised compounds (GUARESCHI and GRANDE), A., i, 112.

developed by starch by the absorption of water (RODEWALD and KATTEIN; RODEWALD), A., i, 477.

Thermal capacity of cobalt chloride solutions (WREWSKY), A., ii, 63. of sulphuric acid solutions (v. BRON), A., ii, 63.

centres of stability in compounds (MARTIN), A., ii, 589.

value of coefficients of acidity and influence (DE FORCRAND), A., ii, 527, 528.

of the hydroxyl function (DE FORCRAND), A., ii, 526.

Temperature, influence of, on the electrical conductivity of dilute amalgams (LARSEN), A., ii, 255.

of maximum density of solutions of ammonium chloride, lithium bromide and iodide (DE COPPET), A., ii, 529.

influence of, on the specific rotation of mono- and di-acetyl- and -phenacetyl-tartrates (McCRAE and PATTERSON), T., 1106.

of boiling mixtures of salts and steam (BUCHANAN), A., ii, 710.

of the body during fasting, and the speed of assimilation of carbohydrates, proteids and fats (MOSSO), A., ii, 605.

Temperatures, fixed, tubular furnace giving (GAUTIER), A., ii, 258.

low, measurement of; boiling and melting points (LADENBURG and KRÜGEL), A., ii, 258.

very low, effect of, on the colour of bromine and iodine compounds (KASTLE), A., ii, 526.

Temperature coefficient of the driving tendency of physicochemical reaction (RICHARDS), A., ii, 533.

of conductivity of some liquid ammonia solutions (FRANKLIN and KRAUS), A., ii, 645.

of ester hydrolysis (PRICE), A., ii, 528.

Critical constants and temperature. See under Critical.

Transition temperatures, determination of (DAWSON and WILLIAMS), P., 1899, 210.

THERMOCHEMISTRY :—*Heat of formation* = *f.*; of *transformation* = *t.*; of *dissociation* = *dis.*; of *combustion* = *c.*; of *neutralisation* = *n.*; of *hydration* = *h.*; of *oxidation* = *o.*

Transition temperatures, new method of determining (COHEN), A., ii, 188.

of monotropic dimorphous substances, determination of the (SCHENCK), A., ii, 465.

of optical isomerides (ADRIANI), A., ii, 462.

of ammonium nitrate, change of, through the addition of potassium nitrate (MÜLLER), A., ii, 188.

of mercuric iodide (GERNEZ), A., ii, 141.

effect of various solvents on the (KASTLE and CLARK), A., ii, 141.

of mixed crystals of sodium and potassium nitrates and of sodium and silver nitrates (HISSINK), A., ii, 339.

of mixed crystals of potassium and thallium nitrates (VAN ELJK), A., ii, 133.

of hepta- and hexa-hydrates of zinc sulphate (BARNES), A., ii, 254.

Manostat (SMITS), A., ii, 388.

Thermocalorimeter, overflowing (MASSOL), A., ii, 386.

Thermostats (BODENSTEIN), A., ii, 12.

Heat conductivity, change of, during melting (VAN AUBEL), A., ii, 128.

of gases (SMOLUCHOWSKI and V. SMOLAN), A., ii, 63.

of mixtures and of their constituents (LEES), A., ii, 333.

of nitrogen tetroxide (MAGNANINI and ZUNINO), A., ii, 525.

Atomic heats, additivity of (MEYER), A., ii, 464.

Specific heat and atomic weights (TILDEN), A., ii, 524.

of fluids (AMAGAT), A., ii, 525.

of alloys at low temperatures (BEHN), A., ii, 259.

of metals (TILDEN), A., ii, 524.

at low temperatures (BEHN), A., ii, 259.

of graphite at low temperatures (BEHN), A., ii, 259.

of nitriles and other organic compounds (LUGININ), A., ii, 334.

of cellulose, wool and leather (FLEURY), A., ii, 188.

of wheat starch (RODEWALD and KATTEIN), A., i, 477.

of blood (BORDIER; BERTHELOT), A., ii, 356.

Latent heat of fusion, effect of temperature or pressure on the (TAMMANN), A., ii, 714.

Heat of formation, supposed negative, of some carbon compounds (VAUBEL), A., ii, 274.

Heat of neutralisation of acids and bases and electrolytic dissociation (THIEL), A., ii, 260.

of acids, in alcohol, by ammonia and by potassium hydroxide (TANATAR and KLIMENKO), A., ii, 713.

Heat of vaporisation of air and of carbon dioxide (BEHN), A., ii, 260.

of nitriles and other organic compounds (LUGININ), A., ii, 334.

Thermochemical data of hyperacids (*n.* and *o.*) (PISSARJEWSKY), A., ii, 466.

of alloys (*f.*) (TAYLER; GLADSTONE), A., ii, 710.

of alloys of copper and zinc (*f.*) (BAKER), P., 1899, 195; (GALT), A., ii, 189.

of alkali hydroxides, and of ammonia and methylamine with hydrogen peroxide (*n.*) (DE FORCRAND), A., ii, 476.

of compounds of barium hydroxide and hydrogen peroxide (*f.* and *n.*) (DE FORCRAND), A., ii, 278.

of hydrated barium peroxide (*f.*) (DE FORCRAND), A., ii, 344.

of calcium peroxide (*f.*) (DE FORCRAND), A., ii, 526.

of hydrates of calcium peroxide (*f.*) (DE FORCRAND), A., ii, 401, 479.

of hydrogen fluoride (*dis.*) (ABEGG), A., ii, 190.

of hydrogen peroxide by basic hydroxides (*n.*) (DE FORCRAND), A., ii, 476.

of hydrogen peroxide by lime (*n.*) (DE FORCRAND), A., ii, 526.

of compounds of lithium bromide and gaseous ammonia (*f.*) (BONNEFOI), A., ii, 478.

of hydrated lithium peroxide (*f.*) of lithium peroxide (*f.*) (DE FORCRAND), A., ii, 478.

of sodium dioxide, hydrate of (*f.*) (DE FORCRAND), A., ii, 129.

of hydrated and anhydrous strontium dioxide (*f.*) (DE FORCRAND), A., ii, 344.

of tungsten (*o.*) (DELÉPINE and HALLOPEAU), A., ii, 8; (DELÉPINE), A., ii, 548.

of very volatile liquids (*c.* and *f.*) (BERTHELOT and DELÉPINE), A., ii, 334.

of *n*-adipic acid (*f.* and *n.*) (MASSOL), A., ii, 260.

THERMOCHEMISTRY :—*Heat of formation* = *f.* ; *of transformation* = *t.* ; *of dissociation* = *dis.* ; *of combustion* = *c.* ; *of neutralisation* = *n.* ; *of hydration* = *h.* ; *of oxidation* = *o.*

Thermochemical data of ammonium cyanate (*f.* and *t.*) (WALKER and WOOD), T., 27 ; P., 1899, 209.

of cacodylic acid (*n.*) (IMBERT), A., i, 145.

of carbonylhydroferrocyanic and hydroferrocyanic acids (*n.*) (MULLER), A., ii, 130.

of diethylenediamine (*c.*, *f.*, *h.*, and *n.*) (BERTHELOT), A., i, 83.

of gallic acid (*n.*) (MASSOL), A., i, 499.

of hemipinic acid (*c.* and *f.*) (LEROY), A., ii, 261.

of organic iodine compounds (*c.* and *f.*) (BERTHELOT), A., ii, 387.

of salts of lactic acid and of lactide (*c.*, *f.*, and *n.*) (BERTHELOT and DELÉPINE), A., ii, 130.

of lithium chloride compounds with ethylamine (*f.*) (BONNEFOI), A., ii, 130.

of substituted malonic acids, compared with that of dibasic acids (*n.*) (MASSOL), A., i, 200.

of meconin (*c.*, *f.*, and *o.*) (LEROY), A., ii, 261.

of mercury-dimethyl-, -diethyl, and -diphenyl (*c.* and *f.*) (BERTHELOT), A., ii, 130.

of methylene sulphate (*c.* and *f.*) (DELÉPINE), A., i, 130.

of narceine, its hydrates, hydrochloride and potassium derivative (*c.*, *f.*, *h.*, and *n.*) (LEROY), A., ii, 131.

of opianic acid (*c.*, *f.*, *n.*, and *o.*) (LEROY), A., ii, 261.

of protocathechuic acid (*f.* and *n.*) (MASSOL), A., i, 600.

of thiocyanates and thiocarbimides (*c.*, *f.*, and *t.*) (BERTHELOT), A., ii, 261.

of 2:3:4-trihydroxybenzoic acid (*n.*) of the sodium salt (*f.*) (MASSOL), A., i, 499.

of the uric acid series (*c.* and *f.*) (BERTHELOT), A., ii, 189.

of violuric acid and of water (*dis.*) (ABEGG), A., ii, 190.

of marcasite and pyrites (*c.*) (CAVAZZI), A., ii, 598.

of human fat (*c.*) (BENEDICT and OSTERBERG), A., ii, 491.

Heat of solution, relation between solubility and, of electrolytes (VAN LAAR), A., ii, 708.

of salts, influence of the medium on (GALITZKI), A., ii, 66.

of hydrogen peroxide (DE FORCRAND), A., ii, 526.

Heat of solution of iron and steel (CAMPBELL), A., ii, 407.

of compounds of lithium bromide and gaseous ammonia (BONNEFOI), A., ii, 478.

of lithium chloride compounds with ethylamine (BONNEFOI), A., ii, 130.

of lithium peroxide and its hydrate (DE FORCRAND), A., ii, 478.

of the hydrate of sodium dioxide (DE FORCRAND), A., ii, 129.

of ammonium cyanate (WALKER and WOOD), T., 27 ; P., 1899, 209.

of *n*-potassium adipate (MASSOL), A., ii, 261.

of diethylenediamine (BERTHELOT), A., i, 83.

of gallic acid (MASSOL), A., i, 499.

of salts of lactic acid and of lactide (BERTHELOT and DELÉPINE), A., ii, 130.

of opianic acid (LEROY), A., ii, 261.

of protocathechuic acid (MASSOL), A., i, 600.

of 2:3:4-trihydroxybenzoic acid and its sodium salt (MASSOL), A., i, 499.

Thetine, $C_6H_{11}O_2S$ (STRÖMHOLM), A., i, 326.

Thetine bromide, reactions of (STRÖMHOLM), A., i, 326.

derivatives, attempts to resolve (STRÖMHOLM ; VANZETTI), A., i, 327.

resolution of (POPE and PEACHEY), T., 1072, P., 1900, 12.

Thiazine colouring matters, blue (SCHAPOSCHNIKOFF), A., i, 523.

structure of (GREEN), A., i, 119.

Thioantimonites (POUGET), A., ii, 84.

Thiocarbamide, action of, on ethyl phenylpropionate (RUHEMANN and STAPLETON), T., 242 ; P., 1900, 12.

derivatives of diacetoneamine (TRAUBE and LORENZ), A., i, 115 ; (TRAUBE and SCHALL), A., i, 118.

Thiocarbamides, aromatic, convenient method for the preparation of (V. BRAUN), A., i, 644.

action of hydrazine on (BUSCH and BAUER), A., i, 414.

acyl derivatives of, isomerism and constitution of (HUGERSHOFF), A., i, 155.

Thiocarbimides from plants (GADAMER), A., i, 49 ; (TER MEULEN), A., i, 511.

isomeric, thermochemistry of (BERTHELOT), A., ii, 261.

- Thiocarbonic acid**, diethyl ester, phenylhydrazone of (WHEELER and BARNES), A., i, 565.
- di***Thiocarbonic acid**, hydrazones of esters of (BUSCH and LINGENBRINK), A., i, 66, 411.
- Thiocyanic acid**, double salts of (MIOLATI; ROSENHEIM and COHN), A., i, 381.
- oxycobaltamine salts of (MASCETTI), A., i, 541.
- Thiocyanates**, double, electrical conductivity of (WALDEN), A., i, 430.
- isomeric, thermochemistry of (BERTHELOT), A., ii, 261.
- Thiolecarbamic acid**, esters, acyl derivatives of (WHEELER and JOHNSON), A., i, 632.
- Thiols**. See Mercaptans.
- Thioncarbamie acid**, esters, action of chloroacetic acid on (WHEELER and BARNES), A., i, 565.
- acyl derivatives of, preparation and behaviour of, with alkyl iodides and amines (WHEELER and JOHNSON), A., i, 632.
- Thioncarbanilic acid**, esters, molecular rearrangement of, and action of chloroacetic acid on (WHEELER and BARNES), A., i, 565.
- Thionyl-di-methyl- and -ethyl-anilines** and their salts (MICHAELIS and SCHINDLER), A., i, 215.
- Thiosilicates**, preparation of (HEMPEL and v. HAAASY), A., ii, 275.
- Thorium compounds**, rays from (CURIE), A., ii, 81; (P. and S. CURIE; P. and S. CURIE and BÉMONT), A., ii, 82.
- a radio-active substance from (RUTHERFORD), A., ii, 351, 352.
- Thorium salts** (ROSENHEIM and SCHILLING), A., ii, 351.
- Thorium chloride** and bromide, compounds of, with hydrogen chloride and pyridine (ROSENHEIM and SCHILLING), A., ii, 351.
- nitrate, purification of commercial (MUTHMANN and BAUR), A., ii, 597.
- double nitrates of quadrivalent (MEYER and JACOBY), A., ii, 597.
- oxide (*thoria*), luminosity of mixtures of ceria and (THIELE), A., ii, 208.
- Thujaketoneoxime**, bases from, and reactions of (WALLACH), A., i, 45.
- Thujamenthone** and *iso***Thujone**, formulæ of (SEMMLER), A., i, 240.
- Thujol**. See Tanacetol alcohol.
- Thujone**. See Tanacetone.
- Thymic acid**, solubility of uric acid in (KOSSEL and GOTO), A., ii, 421; (GOTO), A., ii, 740.
- Thymin** (JONES), A., i, 319.
- preparation of (JONES), A., i, 572.
- dichloro-* (STEUDEL and KOSSEL), A., i, 467.
- Thymol**, sodium derivative of, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 394.
- 2:6-bromonitro- and -chloronitro- (KEHRMANN and SCHOEN), A., i, 181.
- Thymoquinonebenzoylphenylhydrazone** (McPHERSON), A., i, 124.
- Thymoquinoneoximes**, 3- and 6-bromo-, -chloro-, and -iodo- and their acyl derivatives (KEHRMANN and KRÜGER), A., i, 180.
- Thymoxyzacetal** (STOERMER), A., i, 653.
- α -**Thymoxyz-propionic**, -*n*- and -*iso*-butyric, and -*isovaleric* acids and their ethyl esters (BISCHOFF), A., i, 394.
- Thymus** and **Thyroid glands**. See Gland.
- Tin**, enantiotropy of (COHEN and VAN ELJK), A., ii, 83, 212; (COHEN), A., ii, 212, 408.
- Tin compounds**, asymmetric optically active (POPE and PEACHEY), P., 1900, 42, 116.
- analyses of (MENNICKE), A., ii, 688, 761.
- Tin alloys** with antimony (REINDERS), A., ii, 731.
- Tin chlorides** and bromides, compounds of, with anilines (RICHARDSON and ADAMS), A., i, 151.
- compounds of, with the methylamines and tetramethylammonium and the ethylamines (COOK), A., i, 142.
- Stannic chloride**, hydrolysis of (v. KOWALEWSKY), A., ii, 256; (KOHLEAUSCH), A., ii, 409.
- compound of, with nitrosyl chloride (VAN HETEREN), A., ii, 137.
- Stannous chloride**, use of, in Bettendorff's test for arsenic (DIETZE; ENELL; FRENCHS), A., ii, 244.
- Metastannic acid**, absorption of hydrogen and potassium chlorides from aqueous solution by (VAN BEMMELEN and KLOBBIE), A., ii, 338; (VAN BEMMELEN), A., ii, 466.
- Tin, detection, estimation and separation of**—
- test for (ROGERS), A., ii, 445.
- detection of, by ammonium molybdate (LONGSTAFF), A., ii, 318.
- estimation of, in preserved meat, and the state in which it occurs (WIRTHLE), A., ii, 512.
- separation of, from antimony and arsenic (MARBURG), A., ii, 248.

- Tin ores** from Banca and Billiton (BECK), A., ii, 734.
- Tissues**, animal, different effect of ions on (LOEB), A., ii, 357.
- oxidation in (MEDVEDEFF), A., ii, 738.
- chemico-physical relations of juices and (OKER-BLOM), A., ii, 290, 356, 607.
- connective, coagulable proteids of (GIES and RICHARDS), A., ii, 292.
- separation of, from muscle (GOODMAN), A., ii, 671.
- fibrous, hydrolysis of (ÉTARD), A., i, 468.
- white fibrous, glucoproteids of (GIES and CUTTER), A., ii, 293.
- nerve. See Nerves.
- estimation of alcohol in, in acute alcoholism (GRÉHANT), A., ii, 95, 112.
- estimation of urea in (GOTTLIEB), A., ii, 57.
- Titaniferous iron ores**, analysis of (BASKERVILLE), A., ii, 629.
- Titanium**, occurrence of, in flesh and bones (BASKERVILLE), A., ii, 226.
- tetrachloride, hydrolysis of (v. KOWALEWSKY), A., ii, 731.
- Titanium**, estimation of, in iron ores (BRAKES), A., ii, 248; (POPE), A., ii, 409.
- Tobacco**, chemistry of (KISSLING), A., ii, 640.
- New South Wales, amount and estimation of nicotine in (HARKER), A., ii, 778.
- See also Agricultural Chemistry.
- Tobacco smoke**, constituents of (THOMS), A., ii, 428.
- action of the carbonic oxide in, on the organism (WAHL), A., ii, 221.
- Tolane**, refraction of (CHILESOTTI), A., i, 339.
- crystalline form of (BOERIS), A., i, 544.
- v*-**Tolenylinomethyl ether**, re-arrangement of (WHEELER and ATWATER), A., i, 294.
- Tolidine**, colour test for (WOLFF), A., ii, 119.
- Toluene**, refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
- density of (v. HIRSCH), A., ii, 9.
- oxidation of (WEILER), A., i, 283.
- Toluene**, *o*- and *p*-chloro-, electrolytic preparation of (VOTOČEK and ZENÍŠEK), A., i, 19.
- 2:4:5-trichloro- (MORGAN), T., 1204.
- m*-chloro-*mono*- and -4:6-*di*-nitro-, and their reduction products (REVERDIN and CRÉPIEUX), A., i, 638.
- (*Toluene compounds Me=1.*)
- Toluene**, *p*-chloro-*ω*-iodo-, and *p*-chloro-*ω*-nitro- and the *iso*-compound (VAN RAALTE), A., i, 147.
- fluoro-, fluorochloro- and fluorochloro-nitro-derivatives of (SWARTS), A., i, 637.
- m*-iodoso- and its acetate (ORTOLEVA), A., i, 592.
- m*-iodoxy- (BAMBERGER and HILL), A., i, 281; (ORTOLEVA), A., i, 592.
- m*-nitro-, electrolytic reduction of (ROHDE), A., i, 20.
- p*-nitro-, action of sodium on (SCHMIDT), A., i, 20.
- ω*-isounitro- (BAMBERGER), A., i, 500.
- Toluenaeaziminol**. See 1-Hydroxy-6-methyl-1:2:3-benzotriazole.
- p*-**Toluenaeazo-4-chloro-*m*-phenylenediamine** (COHN and FISCHER), A., i, 458.
- o*-**Toluenaeazotolylcarbamie acid**, ethyl ester (BUSCH and HARTMANN), A., i, 59.
- Toluenenitroic acid**, *d*nitro-, salts of (HANTZSCH and KISSEL), A., i, 89.
- p*-**Toluenesulphopropyl-amide** and -*iso*-butylamide (MARCKWALD), A., i, 143.
- Toluenetricarboxylic acid** (DOEBNER), A., i, 500.
- o*-**Toluidine**, 5-chloro- (REVERDIN and CRÉPIEUX), A., i, 638.
- m*-**Toluidine**, 4:6-dichloro- (REVERDIN and CRÉPIEUX), A., i, 645.
- p*-**Toluidine**, compressibility of (HULETT), A., ii, 398.
- 3-chloro- (REVERDIN and CRÉPIEUX), A., i, 638.
- o*- or *p*-**Toluidine**, 5:4- or 3:6-chloro-nitro-, and its acetyl derivative (REVERDIN and CRÉPIEUX), A., i, 638.
- o*- and *p*-**Toluidine hydrochlorides**, double salts of, with bismuth chloride (HAUSER and VANINO), A., i, 641.
- Toluidines**, bromination of (FISCHER and WINDAUS), A., i, 485.
- antimonio-bromides, -chlorides, and -iodides of (HIGBEE), A., i, 285.
- "*o*-**Toluidine**, cyano-" and its acetyl derivative (MEVES), A., i, 483.
- o*-**Toluidinoembelic acid** (HEFFTER and FEUERSTEIN), A., i, 498.
- 5-**Toluidino-4-*o*- and -*p*-tolyltriazoles**, and the 3-methyl derivative of the para-compound (BUSCH and BAUER), A., i, 415.
- p*-**Toluiline** (*tri-p-tolylglyoxaline*) and its salts (PIEPES-PORATYŃSKI), A., i, 648.
- p*-**Toluonitrile**, polymerisation of (PIEPES-PORATYŃSKI), A., i, 648.
- p*-**Toluoyl-*o*-benzoic acid**, compounds from (LIMPRICHT and WIEGAND), A., i, 498.

(Tolyl compounds $Me=1$.)

- p*-Toluoyl-*p*-benzoic acid (LIMPRICHT), A., i, 598.
- p*-Toluoylcarbinolbenzoic acid (LIMPRICHT), A., i, 598.
- p*-Toluoyl- β -propionic acid (LIMPRICHT), A., i, 600.
- Tolu-quinol and -quinone, tetrabromo- (AUWERS; AUWERS and HAMPE), A., i, 97.
- Toluquinone, tribromo- (AUWERS and v. ERGGELET; AUWERS and BURROWS), A., i, 98.
- pentabromo- (AUWERS and BURROWS), A., i, 98.
- Toluquinonebenzoylphenylhydrazone (MCIPHERSON), A., i, 123.
- o*-Toluquinonehydrazones (FARMER and HANTZSCH), A., i, 123.
- Toluquinoneoxime ethers, space isomerism of (MORGAN), A., i, 103.
- Toluquinonephenylhydrazone (MCIPHERSON), A., i, 123.
- Toluric acids, *o*- and *p*-, ethyl esters (RÜGHEIMER and FEHLHABER), A., i, 609.
- Toluroflavins, *o*- and *p*- (dimethylhip-puroflavins) and their anilides, and toluides (RÜGHEIMER and FEHLHABER), A., i, 609.
- p*-Tolylacetylene and α -chloro- (KUNCCELL and GOTSCH), A., i, 638.
- Tolyl acetyl nitrogen chlorides and bromides, *o*- and *p*- (acetyl-chloro- and -bromo-aminotoluenes) (CHATTAWAY and ORTON), T., 790; P., 1900, 102.
- 3-*p*-Tolylbenzazoxazine, 6-nitro-, and its carbanilide (WERNER and HERBERGER), A., i, 58.
- p*-Tolylisobutyric acid (WALLACH), A., i, 229.
- p*-Tolylcarbazine- α -carboxylic acid, esters of (BUSCH and LINGENBRINK), A., i, 413.
- Tolyldiguanides (BEUTEL), A., i, 367.
- m*-Tolylenediamine, difference of basicity of the amino-groups in (BÜLOW), A., i, 690.
- 2:4-Tolylenediamine, 5-chloro- and its acetyl derivatives (MORGAN), T., 1204; P., 1900, 170; (REVERDIN and CRÉPIEUX), A., i, 638.
- p*-Tolyethylene, $\alpha\beta$ -dichloro- (KUNCCELL and GOTSCH), A., i, 638.
- p*-Tolyl-*p*-hydroxybenzylidenemethylhydrazine (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- 3-Tolyl-4'-hydroxyphenylamine, 4:6-dinitro- (REVERDIN and CRÉPIEUX), A., i, 638.

(Tolyl compounds $Me=1$.)

- 3-Tolylimino-2-*p*-tolyl-7-methylphenotriazine and its salts and the dihydro-triazine (BUSCH and HARTMANN), A., i, 59.
- Tolylimino-*o*- and -*p*-tolyltetrazolones, *o*- and *p*- (BUSCH and BAUER), A., i, 415.
- 2-Tolylketo-7-methyl-phenotriazine and -dihydrophenotriazine (BUSCH and HARTMANN), A., i, 59.
- m*- and *p*-Tolyl mercaptans (BOURGEOIS), A., i, 163.
- p*-Tolyl- α -methylhydrazine (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- 1-*p*-Tolyl-3-methylpyrazole and its halogen and nitro-derivatives and their salts (MICHAELIS and SUDENDORF), A., i, 696.
- 7-*o*-Tolyl-naphthaphenazonium, 7-chloro-, salts of (FISCHER and HEPP), A., i, 461.
- 3-Tolyl- α -naphthylamine, 4:6-dinitro-REVERDIN and CRÉPIEUX), A., i, 638.
- p*-Tolyl-*o*-, *m*-, and -*p*-nitrobenzylidenemethylhydrazine (LABHARDT and v. ZEMBRZUSKI), A., i, 125.
- Tolyloxides, sodium, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 392.
- Tolyloxyacetones, *o*-, *m*-, and *p*-, and their oximes, phenylhydrazones, and semicarbazones (STOERMER), A., i, 651.
- β -*m*-Tolyloxy-cinnamic acid, and its ethyl ester (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.
- β -Tolyloxy-cinnamic acids, *o*- and *p*-, and their ethyl esters (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- Tolyloxyfumaric acids, *o*-, *m*-, and *p*-, and their ethyl esters (RUHEMANN and BEDDOW), T., 1124; P., 1900, 165.
- m*-Tolyloxymaleic acid (RUHEMANN and BEDDOW), T., 1125; P., 1900, 165.
- Tolyloxy-propacetals, -propaldehydes and their oximes and semicarbazones, and -propionic acids, *o*-, *m*-, and *p*- (STOERMER), A., i, 651.
- α -Tolyloxy-propionic, -*n*- and -isobutyric, and -isovaleric acids, *o*-, *m*-, and *p*-, and their ethyl esters (BISCHOFF), A., i, 392.
- m*-Tolyloxystyrene (RUHEMANN and BEDDOW), T., 1119; P., 1900, 165.
- o*- and *p*-Tolyloxystyrenes (RUHEMANN and BEDDOW), T., 984; P., 1900, 123.
- Tolylpyridazinone (LIMPRICHT), A., i, 600.
- p*-Tolylpyrrolidone (TAFEL and STERN), A., i, 558.

- (*Tolyl compounds Me = 1.*)
- 7-*o*-Tolyl-isorosindone**, and **-rosindone** and its oxime (FISCHER and HEPP), A., i, 461.
- p*-Tolylrosindulines** and their salts (FISCHER and HEPP), A., i, 462.
- p*-Tolylaposafranin** and its salts (FISCHER and HEPP), A., i, 460.
- p*-Tolylthiocarbimide**, action of, on *o*-aminoazotoluene (BUSCH and HARTMANN), A., i, 59.
- o*-Tolylthionine** and its salts (SCHAPOSCHNIKOFF), A., i, 524.
- v*-Tolylthiosulphonacetacetic acid**, ethyl ester (TROEGER and EWERS), A., i, 495.
- Tolyltrimethylammonium iodides**, *o*-, *m*-, and *p*-, 5-, 6-, and 3-bromo- (FISCHER and WINDAUS), A., i, 484.
- p*-Tolyl-*as-m*-xylyliodonium hydroxide** and salts (WILLGERODT and HOWELLS), A., i, 338.
- Tolylxylylphthalide** (LIMPRICHT), A., i, 599.
- Tolpyrrine**, reactions of (HOFFMANN), A., ii, 379.
- Tomatoes**, detection of foreign colouring matters in preserved (HALPHEN), A., ii, 700.
See also *Agricultural Chemistry*.
- Tonalite** from Cape Marsa (DUPARC and PEARCE), A., ii, 219.
from the eruptive rocks from the Salzkammergut (v. JOHN), A., ii, 219.
- Topaz** from Japan (JIMBŌ), A., ii, 87.
- Tourmaline**, constitution of (PENFIELD), A., ii, 602; (BEERMANN), A., ii, 663.
from Elba (MANASSE), A., ii, 287.
estimation of boric acid in (SARGENT), A., ii, 47.
- Tourmaline mixtures**, theory of (TSCHERMAK), A., ii, 217.
- Toxin**, snake, and toxic sera, hæmolytic action of (STEPHENS), A., ii, 228.
tetanus, action of, on nerve tissue (DANYSZ), A., ii, 156.
and antitoxin, the intravenous injection of (RANSOM), A., ii, 558, 608.
- Toxins**, combination of, with nucleins (STASSANO), A., ii, 559.
- Trachyte-tuff**, cinnabar-bearing from South Tuscany (KLOOS), A., ii, 733.
- Tragacanth**. See *Gum*.
- Transparency** of various liquids to electric oscillations (DE HEEN), A., ii, 524.
- Treacle**, analysis of (MATTHEWS and PARKER), A., ii, 448.
estimation of glucose syrup in (JONES), A., ii, 447.
- Trehalose**, fermentation experiments with (BAU), A., ii, 98.
and its compounds with lime and strontia and its benzoyl derivatives (SCHUKOFF), A., i, 628.
- Triacetaldehydes**, *trithio*- (FROMM), A., i, 14.
- Triacetoneamine**, *di*bromo-, action of amines on (PAULY and BOEHM), A., i, 357.
- Triacetonedibenzamidine** (TEAUBE and SCHWARZ), A., i, 117.
- 1:2:3-Triacetoxyanthraquinone**, its halogen derivatives (SLAMA), A., i, 182.
- 1:3:4-Triacetoxyflavone** (*triacetylapiogenin*) (CZAJKOWSKI, v. KOSTANECKI, and TAMBOR), A., i, 504.
- 1:2:4-Triacetoxy- α - and β -naphthalenes** (THIELE and WINTER), A., i, 505.
- Triacetoxystyrogallol** (SLAMA), A., i, 177.
- 2:4:5-Triacetoxytoluene** (THIELE and WINTER), A., i, 505.
- Triacetoxy**. See also under *Parent Substance*.
- l-Triacetylerythrose** (WOHL), A., i, 140.
- Triacetylajapconitine** (DUNSTAN and READ), T., 54; P., 1899, 207.
- Triacetyl**-. See also under *Parent Substance*.
- Trianiline antimoniochloride** (HIGBEE), A., i, 285.
- Trianilinomethylhydrazine** and its derivatives (BUSCH), A., i, 27; (BUSCH and BAUER), A., i, 414.
- Triazines** from *o*-aminoazo-compounds (BUSCH and HARTMANN), A., i, 59.
- 1:2:3-Triazole** and its **4-mono-** and **-4:5-di-carboxylic acid** (ZINCKE, STOFFEL, and PETERMANN), A., i, 526.
- 1:2:4-Triazole** and its hydrochloride, nitrate and salts (HANTZSCH and SILBERRAD), A., i, 263.
- Triazole derivatives**, conversion of tetrazine derivatives into (HANTZSCH and SILBERRAD), A., i, 263; (BUSCH and HEINRICHS), A., i, 314.
- 1:2:4-Tribenzoxyanthraquinone**, its halogen derivatives (SLAMA), A., i, 182.
- Tribenzoxy**-. See also under *Parent Substance*.
- Tribenzylamine hydrochloride**, *p*-tri-cyano- (MOSES), A., i, 659.
- Tribenzylhydrazine**, *o*-trinitro- (BUSCH and WEISS), A., i, 699.
- Triethylamine oxide**, Bewad's (LACHMAN), A., i, 380.
- Triethylamine tin bromides** (COOK), A., i, 142.
- 1:3:4-Triethylbenzene**. See ψ -Cumene.

- Triethylenediaminechromium** haloids, chromates, nitrate, sulphate, and cobaltchloride (PFEIFFER), A., i, 560.
- Triethylenediaminenickel** chloride (KURNAKOFF), A., i, 209.
- Triethylhydroxylammonium** iodide (LACHMAN), A., i, 380.
- Triethylmethane.** See Heptane.
- Triethylphosphine**, action of, on ω -*di*bromo-*o*-xylene (PARTHEIL and GRONOVER), A., i, 368.
- Triethylsulphine** iodide mercuric iodide (SMILES), T., 162; P., 1899, 240.
- 2:3:6-Trihydroxyanthracoumarin.** See Hydroxystyrogallol.
- 1:2:3-Trihydroxyanthraquinone.** See Anthragallol.
- Trihydroxybenzaldehyde** pentacetate (THIELE and WINTER), A., i, 501.
- 2:3:4-Trihydroxybenzoic acid**, thermochemistry of (MASSOL), A., i, 499.
- Trihydroxybutyric acid.** See *d*-Erythronic acid.
- 1:3:4'-Trihydroxyflavone.** See Apigenin.
- 2:3:4'-Trihydroxyflavone** and its diacetyl derivative (v. KOSTANECKI and SCHMIDT), A., i, 238.
- i*-Trihydroxyglutaric acid**, compound of, with formaldehyde (ALBERDA VAN EKENSTEIN and DE BRUYN), A., i, 619.
- 1:2:4-Trihydroxynaphthalene** and its triacetyl derivative (THIELE and WINTER), A., i, 505.
- Trihydroxy- β -naphthaquinone** (THIELE and WINTER), A., i, 505.
- 1:2:4-Trihydroxy- α -naphthaquinone** (*naphthapurpurin*) from naphthazarin (JAUBERT), A., i, 42.
- Trihydroxytoluene** and its triacetyl derivative (THIELE and WINTER), A., i, 505.
- Triketosantonioic acid** and its dioxime (FRANCESCONI), A., i, 101.
- 1:3:4'-Trimethoxyflavone** (CZAJKOWSKI, v. KOSTANECKI, and TAMBOR), A., i, 504.
- 1:5:6-Trimethoxyphenanthrene** (PSCHORR), A., i, 234.
- Trimethylallylene.** See Hexinene.
- Trimethylamine** from methylmorphimethine (PARTHEIL and GRONOVER), A., i, 516.
- cadmium haloids (RAGLAND), A., i, 141.
- tellurium bromide (LENHER), A., i, 379.
- tin haloids (COOK), A., i, 142.
- 2:4:6-Trimethylbenzamide**, alkali salt of, and compound of, with potassium hydroxide (WHEELER), A., i, 492.
- 1:3:5-Trimethylbenzene.** See Mesitylene.
- 2:3:4-Trimethylbenzoic acid** (*prehnitylic acid*) (LAPWORTH and CHAPMAN), T., 311; P., 1900, 4.
- 2:4:5-Trimethylbenzyl-hydrazine**, and -semicarbazide and their derivatives (CURTIUS), A., i, 612.
- Trimethylbrazilin**, oxidation of, with potassium permanganate (GILBODY, PERKIN, and YATES), P., 1900, 105.
- $\alpha\beta$ -Trimethylbutane- $\alpha\alpha\delta$ -tricarboxylic acid** (NOYES), A., i, 202.
- $\alpha\beta$ -Trimethylbutyric acid**, γ -cyano-, ethyl ester (THORPE and YOUNG), T., 939; P., 1900, 115.
- Trimethylcoumarones**, isomeric (STOERMER), A., i, 652.
- 2:4:6-Trimethyldihydropyridinedicarboxylic acid**, ethyl ester, action of heat on (GUARESCHI and GRANDE), A., i, 112.
- Trimethyldihydropyridone**, cyano-, action of heat on (GUARESCHI and GRANDE), A., i, 112.
- 4:4:6-Trimethyldihydropyrimidine**, 2-amino- and its derivatives (TRAUBE and SCHWARZ), A., i, 116.
- Trimethyldihydroresorcylic acid**, ethyl ester and **Trimethyldihydroresorcinol** and its ethyl ether and bromo-derivatives (CROSSLEY), P., 1900, 90.
- Trimethyldihydroxybenzenes** (COLLIE and STEELE), T., 961; P., 1900, 146.
- Trimethylene** (*cyclopropane*), influence of hydrobromic acid on the rate of action of bromine on (GUSTAVSON), A., i, 535.
- derivatives, synthesis of (GUARESCHI and GRANDE), A., i, 111; (MINOZZI), A., i, 406.
- bromide, action of zinc dust on (WOLKOFF and MENSCHUTKIN), A., i, 423.
- trans*-**Trimethylenedicarboxylic acid**, formation of (BOWTELL and PERKIN), P., 1899, 242.
- Trimethylenedisulphone**, action of formaldehyde on (KÖTZ), A., i, 370.
- Trimethylenepicryl acetate** (v. PECHMANN), A., i, 313.
- 1:3:3-Trimethyl-2-ethylidenindoline** and its hydriodide (PLANCHER), A., i, 561.
- $\alpha\beta$ -Trimethylglutaric acid** (*hexanedicarboxylic acid*) (CROSSLEY), P., 1900, 91.
- 2:4:5-Trimethylhippuric acid** (*duroylic acid*) (RÜGHEIMER and FEHLHABER), A., i, 610.
- Trimethylhydrindamine iodide**, preparation of, and indene from (KIPPING and HALL), T., 469; P., 1900, 54.
- 2:3:3-Trimethylcyclopentanone** (NOYES), A., i, 202.

- Trimethylphloroglucinol** and its *tri*-bromo- and triacetyl-derivatives (HERZIG, POLLAK, and ROHM), A., i, 595.
- Trimethylpropylmethane.** See Heptane.
- 4:5:6-Trimethyl-pyridone** and -pyridine and its salts (GUARESCHI), A., i, 558.
- Trimethylpyrone** (COLLIE and STEELE), T., 961; P., 1900, 146.
- 5:6:8-Trimethylquinoline**, additive compounds and tetrahydride of (WIKANDER), A., i, 310.
- Trimethylsulphine salts** (STRÖMHOLM), A., i, 325.
- iodide mercuric iodide (SMILES), T., 161; P., 1899, 240.
- "Trinaphthylguanidine, cyano-"** (MEVES), A., i, 484.
- Trional**, chemico-toxicology of (VITALI), A., ii, 774.
- Triphenylbenzene** (AMEYE), A., i, 35.
- synthesis of, from acetophenone (DELACRE), A., i, 603.
- from dypnone (GESCHÉ), A., i, 604.
- Triphenylcarbinol**, attempts to prepare ethers of (LANDER), T., 732.
- Triphenylcrotonolactone** (*triphenylbutenolide*) (KLOBB), A., i, 406.
- Triphenyldecahydroacridinedione** (VORLÄNDER and STRAUSS), A., i, 100.
- β-Triphenylguanidine**, preparation of (v. BRAUN), A., i, 643.
- "Triphenylguanidine, cyano-"** (MEVES), A., i, 483.
- Triphenylmethane**, hydrogenised derivatives of (VORLÄNDER), A., i, 99.
- Triphenylmethane dyes**, salts and bases of (HANTZSCH and OSNWALD), A., i, 256; (HANTZSCH), A., i, 365.
- Triphenyloctohydro-xanthenedione** (*"benzylidenephenyldihydroresorcinol"*) (VORLÄNDER and STRAUSS), A., i, 100.
- 1:3:5-Triphenylpyrazole** (WISLIGENUS), A., i, 38.
- 888-Triphenylsemicarbazide**, and its acetyl and benzylidene derivatives (RUPE and LABHARDT), A., i, 250.
- Triphenyltetrazoliumhydroxide-I-m-sulphonic acid**, inner anhydride of (FICHTER and SCHIESS), A., i, 366.
- Tripopylamine oxide**, action of heat on (MAMLOCK and WOLFFENSTEIN), A., i, 209.
- Tripopylenediaminechromium iodide** (PFEIFFER), A., i, 560.
- Tripyridinechromium trichloride** (PFEIFFER), A., i, 559.
- additive compounds of, with nitriles (PFEIFFER), A., i, 688.
- Trisbisdiazomethanetetracarboxylic acid** (HANTZSCH and SILBERRAD), A., i, 262.
- Trisdihydroxybenzoylenebenzene**, and its hexabenzoyl derivative (LANDAU), A., i, 667.
- Trisdiketohydrindene** (LIEBERMANN and FLATOW), A., i, 667.
- Tri-p-tolylglyoxaline.** See *p*-Toluidine.
- Tropine**, formation of, from tropinone (WILLSTÄTTER and IGLAUER), A., i, 404.
- action of potassium permanganate on (WILLSTÄTTER), A., i, 404.
- separation of, from ψ -tropine (WILLSTÄTTER and IGLAUER), A., i, 404.
- Tropine nucleus**, optical properties of (PICCININI), A., i, 249.
- Tropinone**, formation of (WILLSTÄTTER), A., i, 404.
- and its acetyl derivative and semicarbazone (WILLSTÄTTER and IGLAUER), A., i, 244; (WILLSTÄTTER and BODE), A., i, 245.
- reduction of, to tropine and tropan (WILLSTÄTTER and IGLAUER), A., i, 404.
- alkali salts (WILLSTÄTTER and BODE), A., i, 245.
- l-Tropinone** (WILLSTÄTTER and BODE), A., i, 245.
- Tropon.** See Agricultural Chemistry.
- Tumours**, amyloid, in the upper air passages (MANASSE), A., ii, 295.
- Tungsten** (SMITH), A., ii, 80.
- atomic weight of (SMITH and HARDIN), A., ii, 80.
- preparation of pure (DELÉPINE), A., ii, 548.
- preparation of, by the aid of liquid air (STAVENHAGEN), A., ii, 80.
- heat of oxidation of (DELÉPINE and HALLOPEAU), A., ii, 8; (DELÉPINE), A., ii, 548.
- Tungsten compounds**, analysis of (IBBOTSON and BREARLEY), A., ii, 317.
- Tungsten trioxide** (*tungstic anhydride*), action of sulphur chloride on (SMITH and FLECK), A., ii, 81.
- reduction of, by metals (DELÉPINE and HALLOPEAU), A., ii, 8; (DELÉPINE), A., ii, 548.
- Tungstic acids**, complex (KEHRMANN and RÜTTMANN), A., ii, 145.
- Paratungstates** (HALLOPEAU), A., ii, 350.
- Tungsten diphosphide** and iron phosphide (DEFACQZ), A., ii, 350.
- Tungsten organic compounds:**—alkyls (SMITH, BARNETT, and HALL), A., i, 89.
- Tungstic acid**, esters of (SMITH and DUGAN), A., i, 76.

- Tungsten**, separation of, from molybdenum (IBBOTSON and BREARLEY), A., ii, 445.
- Tungsten-lithium bronze** (STAVENHAGEN), A., ii, 80.
- Tungsten ores and residues**, rapid assay of (BORNRÄGER), A., ii, 692.
- Tungsten powders**, metallic, evaluation of (IBBOTSON and BREARLEY), A., ii, 316.
- Tungsten-steel**, analysis of (M'KENNA), A., ii, 765.
estimation of phosphorus in (IBBOTSON and BREARLEY), A., ii, 757.
- Turgite** from Moravia (KOVÁŘ), A., ii, 148.
- Turpentine oil** (TYRER and WERTHEIMER), A., i, 676.
autoxidation of (ENGLER), A., i, 399.
- Turpeth resin**, examination of (DIETRICH), A., ii, 118.
- Turquoise** from New Mexico (PETERSEN), A., ii, 661.
- Tyrosinase**, action of, on tyrosine (GESSARD), A., i, 468.
- Tyrosine** from proteids (REACH), A., i, 126.
colour test for (DENIGÈS), A., ii, 378.
test for, in well waters (CAUSSE), A., ii, 458.
- Tyrosines** (FISCHER), A., i, 172.
- U.**
- Ulva latissima* (sea-weed), and its relation to the pollution of sea water by sewage (LETTS and HAWTHORN), A., ii, 747.
- Undecane- α -di- and $\alpha\alpha$ -tri-carboxylic acids** (KOMPPA), A., i, 201.
- Undecenoic acid**, and its oxidation (THOMS), A., i, 622.
- Unsaturated groups** of atoms, negative nature of (HENRICH), A., i, 429.
- Uracil**, amino-, and its acyl and metallic derivatives and salts (BEHREND and GRÜNWALD), A., i, 63.
- Uranium**, preparation of, by the acid of liquid air (STAVENHAGEN), A., ii, 80.
radiation from (BECQUEREL), A., ii, 518.
radio-activity of (CROOKES), A., ii, 586.
- Uranium compounds**, rays from (CURIE), A., ii, 81; (P. and S. CURIE; P. and S. CURIE and BÉLÉONT), A., ii, 82.
- Uranium trioxide**, compounds of, with sulphurous acid (KOHLSCHÜTTER), A., ii, 484.
oxides, preparation of some (ALOY), A., ii, 484.
- Uranium ores** from West Colorado (HILLEBRAND and RANSOME), A., ii, 599.
radio-active substances from (GIESEL), A., ii, 19.
- Uranyl salts**, constitution of (LEY), A., ii, 67, 731.
fluoride, compounds of, with sodium and with potassium fluoride and the action of hydrogen peroxide on them (LORDKIPANIDZÉ), A., ii, 658.
- Urea** (carbamide), amount of, in the liver (GOTTLIEB), A., ii, 29.
in human milk (SCHÖNDORFF), A., ii, 556.
estimation of, by the hypobromite method, influence of dextrose on (GARNIER and MICHEL), A., ii, 699.
estimation of, in tissues (GOTTLIEB), A., ii, 57.
estimation of, in urine (JOLLES), A., ii, 515.
separation of purine derivatives from (KRÜGER and SCHMIDT), A., ii, 31.
See also Carbanide.
- Ureides**, a quantitative reaction of (JOLLES), A., ii, 454, 636.
- Urethanes**, substituted, nitroso- (HANTZSCH), A., i, 86.
- Uric acid**, formation and decomposition of, in the organism (WIENER), A., ii, 153.
formation of, after splenectomy (MENDEL and JACKSON), A., ii, 607.
deposits of, artificially produced in hens (SCHREIBER and ZAUDY), A., ii, 292.
action of iodine solution and of permanganate on (JOLLES), A., ii, 322.
solubility of, in nucleic and thymic acids (KOSSEL and GORO), A., ii, 421; (GORO), A., ii, 740.
and its salts, behaviour and reactions of, in solution (HIS and PAUL), A., i, 591.
salts of (TUNNICLIFFE and ROSENHEIM), A., i, 636.
precipitation of, by barium chloride, from urine (JOLLES), A., ii, 696.
estimation of, in blood and animal organs (HIS and HAGEN), A., ii, 769.
estimation of, in urine (WÖRNER), A., ii, 251; (JOLLES), A., ii, 450; (BELLOCQ), A., ii, 695.
- Uric acid series**, thermal effect of oxidation and methylation in the (BERTHELOT), A., ii, 189.
- Urinary calculi**, composition of (SPIEGEL), A., ii, 422.
secretion, influence of peptones and albumoses on (THOMPSON), A., ii, 226.

- Urine**, investigation of, by the freezing point and blood corpuscle method combined (HAMBURGER), A., ii, 421.
- cryoscopy of, in diagnosis and prognosis (CLAUDE and BALTHAZARD), A., ii, 154.
- relation of the reducing power of normal, to the amount of certain nitrogen compounds in (LONG), A., ii, 580.
- absorption of free oxygen by normal (BERTHELOT), A., ii, 740.
- oxidation of (COTTON), A., ii, 293.
- influence of caffeine on the output of alkalis in the (KATSUYAMA, KUWAHARA, and SENO), A., ii, 94.
- action of tannin on (GARNIER and MICHEL), A., ii, 58.
- glycolytic action of the (PIERALLINI), A., ii, 420.
- toxicity of (CHARRIN), A., ii, 559.
- of vegetarians, peculiarities in the (LONG), A., ii, 674.
- volume of, eliminated, dependent on quantity and concentration of sugars injected (HEDON and ARROUS), A., ii, 94.
- acetone in (LÜTHJE), A., ii, 229.
- albumin in normal (BELLOCQ), A., ii, 556.
- occurrence of Bence-Jones albumin in (MAGNUS-LEVY), A., i, 615.
- in nephritis, alloxuric substances in (MARTIN), A., ii, 155.
- r-arabinose in (NEUBERG), A., i, 539.
- elimination of sodium cacodylate in, after ingestion (IMBERT and BADEL), A., ii, 293.
- excretion of calcium oxalate in (PIERALLINI), A., ii, 492.
- elimination of carbohydrates in (ROSENFELD), A., ii, 358.
- glycuronic acid in normal (MAYER), A., ii, 155; (MAYER and NEUBERG), A., ii, 421.
- hydroxybutyric acid in diabetic (MAGNUS-LEVY), A., ii, 155.
- indigotin in, after administration of oxalates (HARNACK and v. D. LEYEN), A., ii, 422.
- nitrogen, phosphates, and sulphates in, after ingestion of proteid food (SHERMAN and HAWK), A., ii, 421.
- oxaluric acid in (SALKOWSKI), A., ii, 635.
- isolation of pentose and methylpentose from (BERGELL and BLUMENTHAL), A., ii, 373.
- organic phosphorus compounds in infants (KELLER), A., ii, 293.
- loosely combined sulphur in (PETRY), A., ii, 675.
- Urine**, sulphur in, after extirpation of the liver (LANG), A., ii, 556.
- Urine, analytical processes relating to:**—
- diazot reactions of (BRIEGER), A., i, 316; (CLEMENS), A., ii, 227.
- preparation of Ehrlich's diazo-reagent (WESENBERG), A., ii, 776.
- detection of acetic acid and bilirubin in (ARNOLD), A., ii, 113.
- detection of acetone in (OPPENHEIMER), A., ii, 180.
- detection of acetoacetic acid in pathological (ARNOLD), A., ii, 768.
- detection of albumin in (MANKIEWICZ), A., ii, 459; (JOLLES), A., ii, 516.
- detection of albumoses in (v. ALDOR), A., ii, 123.
- biological detection of arsenic in (SCHOLTZ), A., ii, 244.
- detection of bile pigments in (HAMMARSTEN), A., ii, 637.
- detection of glycuronic acid in (MAYER), A., ii, 155.
- detection of indican in pathological (KLETT), A., ii, 776.
- detection of mercury in (HOEHNEL), A., ii, 368; (JOLLES), A., ii, 576.
- detection of phenetidine in (EDLFSSEN), A., ii, 378.
- source of error in the detection of sugar in, by means of Fehling's solution (EURY), A., ii, 249.
- detection of sugar in, by phenylhydrazine (KOWARSKY), A., ii, 54.
- simplification of the phenylhydrazine test for sugar in (NEUMANN), A., ii, 248.
- effect of glycuronic acid on the phenylhydrazine test for sugar in (MAYER), A., ii, 320.
- detection of urobilin in (ROMAN and DELLUC), A., ii, 700.
- detection of urochloralic acid in, after administration of chloral hydrate (VITALI), A., ii, 115.
- estimation of acetoacetic acid in (ARNOLD), A., ii, 768.
- estimation of acetone, acetoacetic and acetonedicarboxylic acids in (SABBATANI), A., ii, 32.
- estimation of the acidity of (BERTHELOT; NAEGELI), A., ii, 741.
- error in estimating albumin in (DE-ROIDE and OUR), A., ii, 123.
- estimation of allantoin in (LOEWI; PODUSCHKA), A., ii, 636.
- estimation of indican in (WANG), A., ii, 122; (BOUMA), A., ii, 700.
- estimation of mercury in (SCHUMACHER and JUNG), A., ii, 247; (JOLLES), A., ii, 576; (FARUP; WERDER), A., ii, 689.

Urine, analytical processes relating to:—

- clinical estimation of mercury in (ESCHBAUM), A., ii, 368.
- estimation of amino-acid nitrogen in (PFAUNDLER), A., ii, 674.
- estimation of oxalic acid in (SALKOWSKI), A., ii, 635.
- estimation of pentoses in (SULEIMAN BEY), A., ii, 446.
- estimation of the reducing power of (ROSIN), A., ii, 319; (SPIEGEL and PERITZ), A., ii, 457.
- estimation of reducing substances in, by Peške's method (GREGOR), A., ii, 94.
- estimation of sugars in (NEUBERG), A., i, 410; (PELLET), A., ii, 113.
- estimation of sugar in diabetic (PATEIN and DUFAU), A., ii, 176; (TROEGER and MEINE), A., ii, 635.
- estimation of urea in (JOLLES), A., ii, 515.
- estimation of uric acid in (WÖRNER), A., ii, 251; (JOLLES), A., ii, 450; (BELLOCQ), A., ii, 695.
- precipitation of uric acid from, by barium chloride (JOLLES), A., ii, 696.

Urinometer (BENOIT), A., ii, 435.

Urobilin, detection of, in urine (ROMAN and DELLUC), A., ii, 700.

Urochloralic acid, detection of, in urine after administration of chloral hydrate (VITALI), A., ii, 115.

Urotropine. See Hexamethylenetetramine.

Ursic acid (WIDMAN), A., i, 347.

constitution of (PATERNO), A., i, 662.
optical isomerides and oximes of (WIDMAN), A., i, 235.

Usonic acid (WIDMAN), A., i, 348.

Utensils, plated copper, estimation of silver on (GIRARD), A., ii, 170.

V.

Valencies, partial, theory of (KNOEVENAGEL; THIELE), A., ii, 534.

Valeraldehyde, physiological action of (ELFSTRAND), A., ii, 423.

Valeric acid, rotatory power of active (GUYE and ASTON), A., ii, 253.

separation of, from butyric and lactic acids (SCHNEIDER), A., ii, 177.

d-**Valeric acid** (*methyl-2-butyric acid*), methyl ester and amide of, and solubility of its silver salt (TAVERNE), A., i, 472.

*iso***Valeric acid**, α -thiocyano-, esters, formation and boiling points of (WHEELER and BARNES), A., i, 565.

Valeric acids (α - and β -*methylbutyric acids*), γ -cyano-, ethyl esters (HOWLES, THORPE, and UDALL), T., 947; P., 1900, 116.

γ -**Valerolactone- β -dicarboxylic acid** and its diethyl ester (BREDT and KERSHAW), A., i, 136.

Vanadium in plants (DEMARÇAY), A., ii, 235.

in rocks (VOGT), A., ii, 150.

spectrum of (HASSELBERG), A., ii, 381.

Vanadic oxide, preparation of pure, from iron ores (POPE), A., ii, 409.

Vanadiomolybdates and Silicovanadomolybdates (FRIEDHEIM and CASTENDYCK), A., ii, 483.

Vanadium, estimation of, colorimetrically (MAILLARD), A., ii, 577.

estimation of, in iron ores (POPE), A., ii, 409.

separation of, from sulphuric acid (GOYDER), T., 1096.

Vanadium ores from West Colorado (HILLEBRAND and RANSOME), A., ii, 599.

Vanillin, presence of, in vanilla (BEHRENS), A., ii, 679.

in vinegar-essences (FROBENIUS), A., i, 603.

in wine vinegar (STOCKÝ), A., ii, 454.

formation of, in potato parings and its detection (BRÄUTIGAM), A., ii, 427.

action of nitric acid on (BENTLEY), A., i, 552.

estimation of (WELMANS), A., ii, 327; (HANUŠ), A., ii, 773.

Vanillin, *o*-nitro-, acetyl derivative and methyl ether of (PSCHORR and SUMULEANU), A., i, 178.

Vapour density of acetylacetone metallic salts (GACH), A., i, 276.

of bromine at high temperatures (PERMAN and ATKINSON), A., ii, 398.

of dried mercury and of dried mercurous chloride (BAKER), T., 646; P., 1900, 68.

of sulphur (BLEIER and KOHN), A., ii, 203, 721; (SCHALL), A., ii, 271.

See also Density.

Vapour pressure, theory of (GAHL), A., ii, 389.

diminution of, of dilute solutions (SMITS), A., ii, 708.

determination of, under arbitrary pressure (BLEIER and KOHN), A., ii, 192.

determination of the decrease in, by means of the determination of the increase in boiling point (SMITS), A., ii, 389.

- Vapour pressure** of the solvent (PONSOT), A., ii, 337.
 of mercury (HULETT), A., ii, 543.
 relations of mixtures of acetone and water (TAYLOR), A., ii, 529.
 of a series of benzene compounds (WORINGER), A., ii, 709.
 of camphor (ALLEN), T., 413; P., 1899, 135.
 of diisopropyl and diisobutyl (YOUNG and FORTEY), T., 1126; P., 1900, 165.
 of naphthalene (ALLEN), T., 400; P., 1899, 122.
 of *n*-octane (YOUNG), T., 1145; P., 1900, 166.
- Vapour tension.** See Vapour pressure.
- Vegetables.** See Agricultural Chemistry.
- Velocity of chemical change.** See Affinity.
- Veratric acid**, nitro- and amino-, constitution of (PSCHORR and SUMULEANU), A., i, 178.
- Veratrine**, action of chloroform or ether on (SCHAER), A., ii, 455.
 action of, on muscle and nerve (WALLER), A., ii, 425.
- Verbena**, oil of, aldehydic constituents of (KERSCHBAUM), A., i, 353.
- Verbenone** (KERSCHBAUM), A., i, 353.
- Vetches.** See Agricultural Chemistry.
- Vicia seeds**, hydrocyanic acid in (BRUYNING and VAN HAARST), A., ii, 160.
- Vine.** See Agricultural Chemistry.
- Vinegar**, fermentation, detection of aldehyde in (BÖTTINGER), A., ii, 773.
 wine, vanillin in (STOCKÝ), A., ii, 454.
 estimation of acetic acid in (DURIEU), A., ii, 322.
 See also Cider vinegar.
- Vinegar-essences**, vanillin in (FROBENIUS), A., i, 603.
- Vinylacetic acid** (FICHTER and KRAFFT), A., i, 8.
- Vinylidene-oxanilide**, -oxalotoluidides, and -oxaloxylidide (v. PECHMANN and ANSEL), A., i, 287, 389.
- Vinyl nitrate**, triiodo-. See Ethylene, triiodonitro-.
- Vinylthioethylenethioglycollic acid** and its salts (STRÖMHOLM), A., i, 13.
- Violuric acid.** See Barbituric acid, nitroso-.
- Viscosity** (*internal friction*) and electrolytic conductivity in saline solutions (MASSOULIER), A., ii, 331.
 and velocity of solidification of super-cooled liquids (WILSON), A., ii, 712.
 of argon as affected by temperature (RAYLEIGH), A., ii, 590.
- Viscosity** (*internal friction*) of essential oils (DOWZARD), A., i, 676.
 of sulphur (MALUS), A., ii, 536.
 of water and solutions of sodium chloride, and of sucrose (HOSKING), A., ii, 336.
- Vision**, action of amyl nitrite and santonin on (FILEHNE), A., ii, 424.
- Vitalism** and asymmetry (ULPIANI and CONDELLI), A., ii, 463.
- Vitellin**, compounds of, in egg-yolk (OSBORNE and CAMPBELL), A., i, 616.
- Vitexin**, constitution of (PERKIN), T., 422; P., 1900, 45.
- Vivianite** from Moravia (KOVÁŘ), A., ii, 148.
- Volume**, atomic, and magnetic susceptibility of elements, connection between (MEYER), A., ii, 8.
 molecular, absolute (GULDBERG), A., ii, 264; (BERTHELOT), A., ii, 335.
 of camphor derivatives (HALLER and MÜLLER), A., ii, 193.
 specific, of diisopropyl and diisobutyl (YOUNG and FORTEY), T., 1126; P., 1900, 165.
 of *n*-octane (YOUNG), T., 1145; P., 1900, 166.
- Von-Diestite** from Colorado (CUMENGE), A., ii, 660.

W.

Wallflower, active constituents of (REEB), A., i, 186.

WATER:—

- spectrum of the vapour of (TROWBRIDGE), A., ii, 701.
 conductivity of, distilled in air (WALKER and CORMACK), T., 11.
 heat of dissociation of (ABEGG), A., ii, 190.
 vapour pressure relations of acetone and (TAYLOR), A., ii, 529.
 minimum in the molecular lowering of the freezing point of, produced by acids and salts (CHAMBERS and FRAZER), A., ii, 526.
 freezing point curve for, containing hydrogen chloride and phenol (EMERY and CAMERON), A., ii, 335.
 freezing point of mixtures of acetic acid and (DE COPPET), A., ii, 65.
 compressibility of (HULETT), A., ii, 398.
 viscosity of (HOSKING), A., ii, 336.
 equilibrium between acetone, phenol and (SCHREINEMAKERS), A., ii, 393.
 equilibrium between alcohol, an alkali salt and (DE BRUYN), A., ii, 266.

WATER :—

equilibrium between alcohol, gelatin and ; and agar and (HARDY), A., ii, 396.

equilibrium between aniline, phenol and (SCHREINEMAKERS), A., ii, 135.

equilibrium between hydrochloric acid, phenol and (KRUG and CAMERON), A., ii, 393.

equilibrium between phenol, *d*-tartaric or racemic acid, and (SCHREINEMAKERS), A., ii, 393.

absorption and emission of the vapour of, by colloids (DUHEM), A., ii, 338.

decomposition of, by fluorine (MOISSAN), A., ii, 13.

action of metallic magnesium on (BRYANT), A., ii, 278.

reactions in (ROHLAND), A., ii, 468.

Water of crystallisation (SALZER), A., ii, 270.

nature of (RINKE), A., ii, 202.

in the barium and calcium salts of γ -methylvaleric acid (ORNSTEIN), A., i, 7.

NATURAL WATER :—

purification of (TIXIER), A., ii, 71.

apparatus for the distillation of (MAREK), A., ii, 202.

Rain-water collected at Cirencester, amount of chlorine in (KINCH), T., 1271 ; P., 1900, 183.

Glacial waters from Norway (HOLLAND and DICKSON), A., ii, 151.

Lake water of the Salt Lake of Urmi, Persia (GÜNTHER and MANLEY), A., ii, 220.

Spring and mineral waters of Australasia (LIVERSIDGE, SKEY, and GREY), A., ii, 288.

hot sulphur, from Deutsch-Altenburg (LUDWIG and PANZER), A., ii, 90.

from the Cold or "Park" spring at Evaux-les-Bains (BONJEAN), A., ii, 488.

French, composition of (CARNOT), A., ii, 552.

from Graubünden, Switzerland (NUSSBERGER), A., ii, 90.

from Jolite, near Dôle, Jura (BOURCET), A., ii, 355.

from Lutrak, Greece (DAMBERGIS), A., ii, 90.

of Monsummano (ALBERTONI and CORONEDI), A., ii, 90.

of Mont-Dore, gases from the (PARMENTIER and HURION), A., ii, 415.

from the Brault No. 3 spring at Sail-sous-Couzan (BONJEAN), A., ii, 488.

NATURAL WATER :—

Spring and mineral waters of Salso-maggiore (NASINI and ANDERLINI), A., ii, 489.

combustible gases from the (NASINI and SALVADORI), A., ii, 415.

of Spain and Portugal, fluorine in (FERREIRA DA SILVA and D'AGUIAR), A., ii, 28.

apparatus for the estimation of carbon dioxide in (HELD), A., ii, 169.

estimation of silica in, colorimetrically (SALVADORI and PELLINI), A., ii, 367.

Sea water, composition of, and evaporation of, at 25° (VAN'T HOFF and MEYERHOFFER), A., ii, 23.

influence of temperature and pressure on the evaporation of (VAN'T HOFF and DAWSON), A., ii, 76.

calcium carbonate in (COHEN and RAKEN), A., ii, 725.

poisonous action of, on plants (COUPIN), A., ii, 236.

examination of, optically (MANLEY), A., ii, 619.

estimation of dissolved oxygen in (LETTS and BLAKE), A., ii, 755.

Well waters, connection between chlorides, nitrates and sulphates in (KÖNIG), A., ii, 438.

impure, cystin and tyrosine in (CAUSSE), A., ii, 457, 458.

Water analysis :—

detection of nitric acid in (URTZ), A., ii, 438.

detection of nitrous acid in (ERDMANN), A., ii, 243 ; (SPIEGEL), A., ii, 318 ; (MENNICKE), A., ii, 438, 621 ; (SCHAER), A., ii, 438.

estimation of ammonia and nitrogen in, apparatus for (WESTON), A., ii, 685.

estimation of the hardness of (VENTUROLI), A., ii, 579.

estimation of nitric acid in (HÖNIG), A., ii, 242.

estimation of nitrous acid in (ROMIJN), A., ii, 510.

estimation of dissolved oxygen in (MUTSCHLER), A., ii, 106 ; (ZETSCHKE), A., ii, 166 ; (LETTS and BLAKE), A., ii, 755.

Wax of Bacillariaceæ (KRAEMER and SPILKER), A., i, 73.

bees', detection and estimation of impurities in (FUNARO), A., ii, 55.

Japan, constituents of (GETTEL and VAN DER WANT), A., i, 271.

(*o*-Xylene, *Me:Me*=1:2; *m*-xylene, *Me:Me*=1:3; *p*-xylene, *Me:Me*=1:4.)

- Waxes**, acetyl value of (LEWKOWITSCH), A., ii, 323.
- Weight, molecular**, by the boiling point method, apparatus for determining (MCCOY), A., ii, 387.
- drop methods for the determination of (ROSSET), A., ii, 336.
- of gases, determination of, from their density (VAN DER WAALS), A., ii, 134.
- of liquids and van't Hoff's equation (SPEYERS), A., ii, 10.
- of iodine and its *mono*- and *tri*-chlorides and of phosphorus *pentachloride*, in various solvents (ODDO and SERRA), A., ii, 73.
- of ozone (LADENBURG), A., ii, 721.
- of phosphoryl bromides and chlorides, of sulphur chlorides, and of chromyl dichloride in various solvents (ODDO and SERRA), A., ii, 75.
- of sulphur (BLEIER and KOHN), A., ii, 203, 721; (ARONSTEIN and MEIUIZEN), A., ii, 341.
- of the aldols (KOHN), A., i, 274.
- of starch (RODEWALD and KATTEIN), A., i, 477.
- Weights**, method of testing (RICHARDS), A., ii, 534.
- "Weissmetall,"** analysis of (NISSEN-SON), A., ii, 108.
- Westanite** from Westanå, Sweden (WEIBULL), A., ii, 286.
- Wheat**, oil from (FRANKFORTER and HARDING), A., ii, 37.
- See also *Agricultural Chemistry*.
- Willow bark**, new glucoside from (JOWETT), T., 707; P., 1900, 89.
- Wines**, chemistry and analysis of (RIPPER), A., ii, 319.
- marc, recognition of (FRESENIUS and GRÜNHUT), A., ii, 52.
- addition of phenolphthalein to (V. VÁMOSSY), A., ii, 676.
- detection of fluorine in (PARIS), A., ii, 572.
- detection of "saccharin" in (VITALI), A., ii, 57.
- cause of error in testing for salicylic acid in (FERREIRA DA SILVA), A., ii, 695.
- estimation of potassium hydrogen tartrate in (MAGNIER DE LA SOURCE), A., ii, 768.
- estimation of sugars in, polarimetrically (PELLET), A., ii, 113; (ROCQUES), A., ii, 695.
- Woad** (*Isatis tinctoria*), formation of indigotin from (BEYERINCK), A., i, 230, 430, 649.
- Wool**, specific heat of (FLEURY), A., ii, 188.
- Wool fat**, analysis of (BORNTRÄGER), A., ii, 773.
- Work**, muscular, influence of alcohol on (SCHEFFER), A., ii, 418.
- X.**
- Xanthic acid**, potassium salt, preparation of, for nickel estimations (CAMPBELL), A., ii, 577.
- Xanthine**, new synthesis of (TRAUBE), A., i, 416.
- Xanthine bases** in faeces (PARKER), A., ii, 556.
- Paraxanthine**, decomposition of, in the organism (KRÜGER and SCHMIDT), A., ii, 31.
- Xanthone**, *mono*- and *di*-thio- (MEYER; MEYER and SZANECKI), A., i, 660.
- Xantho-rhamnin** and **rhamnein** (C. and G. TANRET), A., i, 185.
- Xylenes**, *o*-, *m*-, and *p*-, refraction and magnetic rotation of (PERKIN), T., 267; P., 1899, 237.
- density of (V. HIRSCH), A., ii, 9.
- o*-Xylene**, $\omega\omega_1$ -*di*bromo-, action of triethylphosphine on (PARTHEIL and GRONOVER), A., i, 368.
- 3-iodo- (KLAGES and LIECKE), A., i, 387.
- m*-Xylene**, *as*-iodoso-, *as*-iodoxy-, and *as*-iodonium-compounds of (WILLGERODT and HOWELLS), A., i, 338.
- m*- and *p*-Xylenes**, 2-iodo- (KLAGES and LIECKE), A., i, 387.
- as-m*-Xyleneazo-4-chloro-*m*-phenylenediamine** (COHN and FISCHER), A., i, 458.
- Xylenenitroic acid**, dinitro-, salts of (HANTZSCH and KISSEL), A., i, 90.
- 1:2:4-Xylenol**, ω :2:5:6- and ω :3:5:6-*tetra*-, $\omega\omega$:3:5:6-*penta*-bromo-, and *tri*-bromo- $\omega\omega$ -*di*iodo-, acetyl derivatives; and ethers of (AUWERS), A., i, 96; (AUWERS and V. ERGGELET), A., i, 97.
- $\omega\omega\omega\omega$:3:4:6-*hepta*bromo-, and its acetyl derivatives and ethers (AUWERS), A., i, 96; (AUWERS and BURROWS), A., i, 98.
- 1:3:4-Xylenol**, action of chloroform and alkalis on (AUWERS), A., i, 160.
- $\omega\omega$:2:5:6-*penta*bromo-, acetyl derivatives of, and their reactions; and 2:5:6-*tribromo*- $\omega\omega$ -*di*iodo- (AUWERS; AUWERS and HAMPE), A., i, 96.
- methyl ether (AUWERS; AUWERS and HAMPE), A., i, 96.
- 1:4:3-Xylenol**, *tribromo*- (AUWERS and ANSELMINO), A., i, 160.
- ω :2:5:6-*tetra*bromo- (AUWERS and ANSELMINO), A., i, 160; (AUWERS and BROICHER), A., i, 162.

(*o*-Xylene, *Me:Me* = 1:2; *m*-xylene, *Me:Me* = 1:3; *p*-xylene, *Me:Me* = 1:4.)

- 1:4:5-Xylenol**, ω :2:3:6-pentabromo-, and its acetyl derivative (AUWERS and ANSELMINO), A., i, 160.
- Xylenols**, bromo-derivatives, oxidation products of (AUWERS), A., i, 161; (AUWERS, BROICHER, and WOLFF), A., i, 162.
- Xylenoxy-acetal and -aldehyde hydrate** and its oxime and semicarbazone, *o*- and *m*- (STOERMER), A., i, 652.
- Xylenoxyacetones**, *o*-, *as-m*-, and *p*-, and their oximes (STOERMER), A., i, 652.
- Xylidines**, bromination of, and their acetyl derivatives (FISCHER and WINDAUS), A., i, 484.
isomeric, separation of, from commercial xylidine (HODGKINSON and LIMPACH), T., 65; P., 1899, 202.
- Xylynic lactone** (CLOWES and TOLLENS), A., i, 205.
- Xylose** from tragacanth (WIDTSON and TOLLENS), A., i, 207.
fermentation of (SALKOWSKI), A., i, 628.
synthesis of *l*-erythritol from (MAQUENNE), A., i, 472.
- l*-Xylose**, phenylbenzylhydrazone of (RUFF and OLLENDORFF), A., i, 77.
- d*- and *l*-Xylose**, from galonic acid (FISCHER and RUFF), A., i, 539.
- Xylosoxime** (MAQUENNE), A., i, 424, 472.
- m*-Xylylamine** and its derivatives (SOMMER), A., i, 388.
- m*-Xylylcarbamie acid**, ethyl ester, and ***m*-Xylylcarbimide**, and their 5- and 6-nitro-derivatives. (VITTENET), A., i, 154.
- p*-Xylylchloroacetylene** (KUNCKELL and GOTSCH), A., i, 639.
- o*-Xylylenebistriethylphosphine** and its salts (PARTHEIL and GRONOVER), A., i, 368.
- m*-Xylylene dibromide** and bromobenzene, action of sodium on a mixture of (PELLEGRIN), A., i, 151.
- Xylylene hydrosulphides**, *o*-, *m*-, and *p*- (KÖTZ), A., i, 343.
- Xylylenemethylenemercaptals**, *o*-, *m*-, and *p*- (KÖTZ), A., i, 343.
- Xylyloxides**, sodium, compounds of, with the ethyl esters of α -bromo-fatty acids (BISCHOFF), A., i, 393.
- α -Xylyloxy-propionic**, *n*- and *-isobutyric*, and *-isovaleric acids*, *o*-, *m*-, and *p*-, and their ethyl esters (BISCHOFF), A., i, 393.
- o*-Xylyl-phthaloylic acid** and **-phthalide** (LIMPRICHT), A., i, 599.
- m*-Xylyl-*p*-toluidine**, *o*- and *p*-amino- (COHN and FISCHER), A., i, 690.

- Xylyl-2- and -4-trimethylammonium iodides**, *p*- and *m*-, 5- and 6-bromo- (FISCHER and WINDAUS), A., i, 484.

Y.

- Yeast** (BÖTTINGER), A., ii, 33.
reproduction of, without fermentation (ROSENSTIEHL), A., ii, 229.
fermentation of (LINTNER), A., ii, 296.
chemical fermentation by, in an antiseptic medium (DE REY-PAILHADE), A., ii, 678.
formation of enzymes characteristic of (KLÖCKER), A., ii, 743.
physiology of (DUCLAUX), A., ii, 678.
estimation of starch in (BRUYLANTS and DRUYTS), A., ii, 113; (CRISPO), A., ii, 176.
- "Yeast, Chinese,"** and *Mucor Rouxi* (WEHMER), A., ii, 743.
- Yeasts**, effect of mineral and nitrogenous nutritive matters on (KUSSEROW), A., ii, 33.
of "sake" (KOZAI), A., ii, 743.
- Yeast extract** (ALBERT and BUCHNER), A., i, 320, 420.
Buchner's (WRÓBLEWSKI), A., ii, 157.
concentrated (AHRENS), A., ii, 610.
precipitation of (ALBERT and BUCHNER), A., i, 420.
precipitation of zymase from (ALBERT and BUCHNER), A., i, 320.
- Yttrium**, atomic weight of (MUTHMANN and BÖHM), A., ii, 209.
specific gravity of (MEYER), A., ii, 143.
microchemical researches on erbium, didymium and (POZZI-ESCOT and COUQUET), A., ii, 404.
oxide (*yttria*), preparation of pure (MUTHMANN and BÖHM), A., ii, 209.

Z.

- Zinc**, boiling point of (BERTHELOT), A., ii, 654.
solution tension of, in ethyl alcohol (JONES and SMITH), A., ii, 467.
equilibrium between lead and, and mixtures of their fused chlorides (REINDERS), A., ii, 715.
- Zinc alloys** with copper, heat of combination of (BAKER), P., 1899, 195; (GALT), A., ii, 189.
action of, on nitric acid (GLADSTONE), A., ii, 710.
with platinum (HODGKINSON, WARING, and DESBOUGH), A., ii, 282.
- Zinc borate** (OUVRARD), A., ii, 207.
fluoride, double salts with aluminium or ferric fluoride (WEINLAND and KÖPPEN), A., ii, 143.

Zinc hydroxide, solubility of (HERZ), A., ii, 338.

equilibrium in the partition of an acid between ammonia and (HERZ), A., ii, 337.

oxide, behaviour of, at high temperatures (SCHÜPPHAUS), A., ii, 207.

ammonium phosphate, estimation of zinc in (AUSTIN), A., ii, 49.

double selenates, crystallography of (TUTTON), A., ii, 593.

selenide, dimorphism of (FONZES-DIACON), A., ii, 345.

sulphate, combination of, with ammonia in aqueous solution (DAWSON and McCRAE), T., 1245; P., 1900, 173.

hydrates of, solubility of (COHEN), A., ii, 184.

hydroximidodisulphate, production of (DIVERS and HAGA), T., 690; P., 1900, 71.

potassium sulphate (MALLER), T., 220; P., 1899, 227.

thioantimonite and its double salt with potassium (POUGET), A., ii, 84.

Zinc organic compounds:—

alkyls, action of, on alkyl nitrites and on nitroparaffins (BEWAD), A., i, 629.

ethyl, preparation of (LACHMAN), A., i, 542.

Zinc, estimation of:—

analysis of, for cadmium and lead (MACKAY), A., ii, 49.

Zinc, estimation of:—

titration of, with potassium ferrocyanide (MILLER and HALL), A., ii, 688.

estimation of, volumetrically (MEADE), A., ii, 575.

estimation of, electrolytically, in presence of manganese (RIEDERER), A., ii, 49.

estimation of, by solution in hydrochloric acid (BALDY), A., ii, 690.

estimation of, as phosphate (DAKIN), A., ii, 624.

estimation of, gravimetrically, as sulphate (EULER), A., ii, 760.

technical estimation of, in ores (LOW), A., ii, 441.

estimation of, in organic substances (LEHMANN), A., ii, 170.

estimation of, in zinc ammonium phosphate (AUSTIN), A., ii, 49.

Zinc-schefferite from Franklin furnace, New Jersey (WOLFF), A., ii, 735.

Zingiberene from oil of ginger (v. SODEN and ROJAHN), A., i, 605.

Zinnwaldite (?) from Japan (JIMBÓ), A., ii, 87.

Zirconium, specific gravity of (MEYER), A., ii, 143.

separation of, from iron (HAVENS and WAY), A., ii, 50.

Zoisite (TERMIER), A., ii, 735.

Zymase, precipitation of, from yeast extract (ALBERT and BUCHNER), A., i, 320, 420.

condition of, in yeast extract (AHRENS), A., ii, 611.